

2000

# Virginia Commonwealth University Undergraduate and Professional Programs Bulletin

Virginia Commonwealth University

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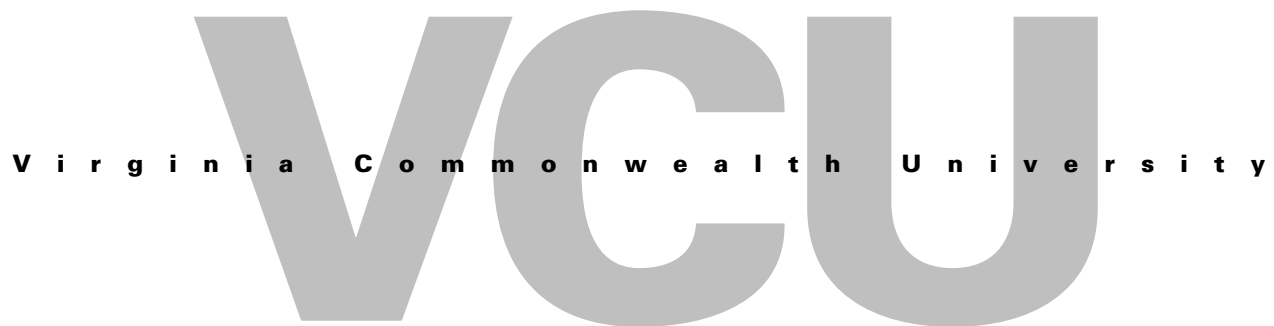
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*Undergraduate and Professional Programs*

*Bulletin*  
*2000-2001*

**Volume LXXII**

**June 2000**

*Academic and Medical College of Virginia Campuses*

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### Virginia Commonwealth University Division of University Outreach Outreach Publications

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The bulletin for the academic year a student enters or re-enters a degree program identifies the curriculum degree requirements for that student. Students in continuous enrollment may fulfill the curriculum degree requirements of the bulletin for the year they entered VCU or in the alternative, choose to be subject to the curriculum degree requirements articulated in a subsequent bulletin. In either case, students must fulfill all curriculum degree requirements listed in the bulletin they choose.

The contents of this bulletin represent the most current information available at the time of publication. However, during the period of time covered by this bulletin, it is reasonable to expect changes to be made with respect to this information without prior notice. Thus, the provisions of this bulletin are not to be regarded as an irrevocable contract between the university (or any of its divisions) and the student.

All rules and regulations set forth in this bulletin will apply until further notice. The university reserves the right to make changes including, but not limited to, changes in courses of study, fees, rules, regulations, programs, faculty and staff, and classification of students, whenever university authorities, in their sole discretion, deem it appropriate, expedient or wise to do so.

# Academic Calendar 2000-2001

## AUGUST 2000

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

### 21-23

Advising and registration for new undergraduate students – Academic Campus

### 21-23

Orientation and registration – MCV Campus

### 24

Registration for new graduate and new certificate students – Academic Campus

### 24

Fall classes begin at 8 a.m. – MCV Campus

### 24-26

Orientation for new freshmen, transfer and readmitted students – Academic Campus

### 24-Sep 1

Add/drop and late registration – MCV Campus

### 25

Registration for continuing students – Academic Campus

### 26

Official date for certifying August diplomas

### 28

Fall classes begin at 8 a.m. – Academic Campus

### 28-Sep 1

Add/drop and late registration – Academic Campus

## SEPTEMBER 2000

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

### 1

Deadline for submission of all approved change of major requests effective for the fall 2000 semester

### 4

University closed

### TBA

Faculty Convocation

### 8

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays\*

### 22

Last day for fall degree candidates to submit graduation applications to their advisers for December degrees – Academic Campus

Fall degree candidates should follow departmental deadlines – MCV Campus

### 26

Last day for undergraduate students to submit work for removal of incomplete grades from spring semester or summer sessions – Academic Campus

## OCTOBER 2000

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### 20

Last day to withdraw from a course with a mark of "W" – both campuses (except for courses not scheduled for the full semester)

### 23-27

Advising for spring semester – Academic Campus

Students should follow departmental schedule – MCV Campus

### 30

Spring semester advance registration begins for all students

## NOVEMBER 2000

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

### 23-26

University closed – evening classes (classes beginning at 4 p.m. or later) do not meet on Nov 22

## DECEMBER 2000

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

### TBA

August and December Graduation Reception

### 8

Final date for graduate dean's approval signature on completion of graduate thesis/dissertation for December degree candidates (check with graduate program director regarding internal schedules for submission of copy, defense and school/college dean approval)

### 8

Last day of classes for fall semester – both campuses; Saturday classes meet on Dec 9

### 11-15

Final examinations for fall semester – MCV Campus

### 11-16

Final examinations for fall semester – evening classes

### 11-19

Final examinations for fall semester – Academic Campus

### 23

Official date for certifying December diplomas

### 25-26

University closed

### 27

Holiday intersession classes begin

### 29

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – holiday intersession\*

### 29

University closed – holiday intersession classes meet

Some school and/or departmental calendars may differ from the university's academic calendar. Students should check with their program of study to ensure they follow the appropriate calendar.

\* Reasonable accommodations for completion of work missed should be made for students observing religious holidays. A partial list of major religious holidays is provided on the Web.  
— — — [www.vcu.edu/hr/communications/major%20holidays.htm](http://www.vcu.edu/hr/communications/major%20holidays.htm)



# Academic Calendar 2000-2001

## JANUARY 2001

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

- 1**  
University closed†
- 9**  
Holiday intersession classes end
- 9-11**  
Advising, registration and orientation for new undergraduate students – Academic Campus
- 11**  
Registration for new graduate and new certificate students – Academic Campus
- 12**  
Registration for continuing students – Academic Campus
- 15**  
University closed†
- 16**  
Spring classes begin at 8 a.m. – both campuses
- 16-19**  
Add/drop and late registration for all students
- 19**  
Deadline for submission of all approved change of major requests effective for the spring 2001 semester
- 26**  
Last day for spring degree candidates to submit graduation applications to their advisers for May degrees – Academic Campus
- Spring degree candidates should follow departmental deadlines – MCV Campus
- 26**  
Deadline for students to provide advance written notification to instructors of intent to observe religious holidays\*

## FEBRUARY 2001

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

- 13**  
Last day for undergraduate students to submit work for removal of incomplete grades for fall semester – Academic Campus

## MARCH 2001

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

- 9**  
Last day to withdraw from a course with a mark of "W" – both campuses (except for courses not scheduled for the full semester)
- 10-18**  
Spring break for both campuses – Saturday classes meet on Mar 10
- 19**  
Summer advance registration begins
- 26-30**  
Advising for fall semester – Academic Campus
- Students should follow departmental schedule – MCV Campus

## APRIL 2001

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

- 2**  
Fall semester advance registration begins

## MAY 2001

S	M	T	W	T	F	S
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

- 1**  
Final date for graduate dean's approval signature on completion of graduate thesis/dissertation for May degree candidates (check with graduate program director regarding internal schedules for submission of copy, defense and school/college dean approval)
- 1**  
Classes end for spring semester – Academic Campus; evening classes continue through May 5
- 2**  
Study day – Academic Campus
- 3-11**  
Final examinations for spring semester – Academic Campus
- 4**  
Last day of classes for spring semester – MCV Campus
- 7-11**  
Final examinations for spring semester – MCV Campus
- 7-12**  
Final examinations for spring semester – evening classes
- 19**  
Commencement (including 2000 August and December graduates)

Some school and/or departmental calendars may differ from the university's academic calendar. Students should check with their program of study to ensure they follow the appropriate calendar.

\* Reasonable accommodations for completion of work missed should be made for students observing religious holidays. A partial list of major religious holidays is provided on the Web.  
— — — [www.vcu.edu/hr/communications/major%20holidays.htm](http://www.vcu.edu/hr/communications/major%20holidays.htm)

† Subject to approval

# Academic Calendar Summer 2001

## MAY 2001

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

### 21-Jun 8

3-week session

### 21-Jun 21

5-week session

### 23

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week session\*

### 25

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week session\*

### 28

University closed†

### 29-Jul 19

8-week evening session

## JUNE 2001

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

### 8

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 8-week evening session\*

### 18-Jul 18

4 1/2-week session

### 18-Jul 26

6-week session

### 18-Aug 9

8-week evening session

### 22

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week, 6-week and 8-week sessions\*

### 25-Jul 26

5-week session

### 29

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week session\*

### 29

Last day for summer degree candidates to submit graduation applications to their advisers for August degrees – Academic Campus

Summer degree candidates should follow departmental deadlines – MCV Campus

## JULY 2001

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

### 4

University closed†

### 19-Aug 17

4 1/2-week session

### 27

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week session\*

### 30-Aug 17

3-week session

## AUGUST 2001

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

### 1

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week session\*

### 17

Final date for graduate dean's approval signature on completion of graduate thesis/dissertation for August degree candidates (check with graduate program director regarding internal schedules for submission of copy, defense and school/college dean approval)

### 17

Summer sessions end

Some school and/or departmental calendars may differ from the university's academic calendar. Students should check with their program of study to ensure they follow the appropriate calendar.

\* Reasonable accommodations for completion of work missed should be made for students observing religious holidays. A partial list of major religious holidays is provided on the Web.  
--- [www.vcu.edu/hr/communications/major%20holidays.htm](http://www.vcu.edu/hr/communications/major%20holidays.htm)

† Subject to approval

# Academic Calendar 2001-2002

**AUGUST 2001**

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

**20-22**

Advising and registration for new undergraduate students – Academic Campus

**20-22**

Orientation and registration – MCV Campus

**23**

Registration for new graduate and new certificate students – Academic Campus

**23**

Fall classes begin at 8 a.m. – MCV Campus

**23-25**

Orientation for new freshmen, transfer, and readmitted students – Academic Campus

**23-31**

Add/drop and late registration – MCV Campus

**24**

Registration for continuing students – Academic Campus

**25**

Official date for certifying August diplomas

**27**

Fall classes begin at 8 a.m. – Academic Campus

**27-31**

Add/drop and late registration – Academic Campus

**31**

Deadline for submission of all approved change of major requests effective for the fall 2001 semester

**SEPTEMBER 2001**

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

**3**

University closed†

**TBA**

Faculty Convocation

**7**

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays\*

**21**

Last day for fall degree candidates to submit graduation applications to their advisers for December degrees – Academic Campus

Fall degree candidates should follow departmental deadlines – MCV Campus

**25**

Last day for undergraduate students to submit work for removal of incomplete grades from spring semester or summer sessions – Academic Campus

**OCTOBER 2001**

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

**19**

Last day to withdraw from a course with a mark of "W" – both campuses (except for courses not scheduled for the full semester)

**22-26**

Advising for spring semester – Academic Campus

Students should follow departmental schedule – MCV Campus

**29**

Spring semester advance registration begins for all students

**NOVEMBER 2001**

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

**22-25**

University closed† – evening classes (classes beginning at 4 p.m. or later) do not meet on Nov 21

**DECEMBER 2001**

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

**7**

Final date for graduate dean's approval signature on completion of graduate thesis/dissertation for December degree candidates (check with graduate program director regarding internal schedules for submission of copy, defense and school/college dean approval)

**7**

Last day of classes for fall semester – both campuses; Saturday classes meet on Dec 8

**10-14**

Final examinations for fall semester – MCV Campus

**10-15**

Final examinations for fall semester – evening classes

**10-18**

Final examinations for fall semester – Academic Campus

**22**

Official date for certifying December diplomas

**24-25**

University closed†

**27**

Holiday intercession classes begin

**29**

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – holiday intercession\*

**31**

University closed† – holiday intercession classes meet

Some school and/or departmental calendars may differ from the university's academic calendar. Students should check with their program of study to ensure they follow the appropriate calendar.

\* Reasonable accommodations for completion of work missed should be made for students observing religious holidays. A partial list of major religious holidays is provided on the Web.  
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† Subject to approval

# Academic Calendar 2001-2002

## JANUARY 2002

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**1**  
University closed†

**8-10**  
Advising, registration and orientation for new undergraduate students – Academic Campus

**9**  
Holiday intersession classes end

**10**  
Registration for new graduate and new certificate students – Academic Campus

**11**  
Registration for continuing students – Academic Campus

**14**  
Spring classes begin at 8 a.m. – both campuses

**14-18**  
Add/drop and late registration for all students

**18**  
Deadline for submission of all approved change of major requests effective for the spring 2002 semester

**21**  
University closed†

**25**  
Last day for spring degree candidates to submit graduation applications to their advisers for May degrees – Academic Campus

Spring degree candidates should follow departmental deadlines – MCV Campus

**25**  
Deadline for students to provide advance written notification to instructors of intent to observe religious holidays\*

## FEBRUARY 2002

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

**12**  
Last day for undergraduate students to submit work for removal of incomplete grades for fall semester – Academic Campus

## MARCH 2002

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

**8**  
Last day to withdraw from a course with a mark of "W" – both campuses (except for courses not scheduled for the full semester)

**9-17**  
Spring break for both campuses – Saturday classes meet on Mar 9

**18**  
Summer advance registration begins

**25-29**  
Advising for fall semester – Academic Campus

Students should follow departmental schedule – MCV Campus

## APRIL 2002

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

**1**  
Fall semester advance registration begins

**30**  
Final date for graduate dean's approval signature on completion of graduate thesis/dissertation for May degree candidates (check with graduate program director regarding internal schedules for submission of copy, defense and school/college dean approval)

**30**  
Classes end for spring semester – Academic Campus; evening classes continue through May 4

## MAY 2002

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

**1**  
Study day – Academic Campus

**2-10**  
Final examinations for spring semester – Academic Campus

**3**  
Last day of classes for spring semester – MCV Campus

**6-10**  
Final examinations for spring semester – MCV Campus

**6-11**  
Final examinations for spring semester – evening classes

**18**  
Commencement (including 2001 August and December graduates)

Some school and/or departmental calendars may differ from the university's academic calendar. Students should check with their program of study to ensure they follow the appropriate calendar.

\* Reasonable accommodations for completion of work missed should be made for students observing religious holidays. A partial list of major religious holidays is provided on the Web.  
--- [www.vcu.edu/hr/communications/major%20holidays.htm](http://www.vcu.edu/hr/communications/major%20holidays.htm)

† Subject to approval

# Academic Calendar Summer 2002

## MAY 2002

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

### 20-Jun 7

3-week session

### 20-Jun 20

5-week session

### 22

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week session\*

### 24

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week session\*

### 27

University closed†

### 28-Jul 18

8-week evening session

## JUNE 2002

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

### 7

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 8-week evening session\*

### 17-Jul 17

4 1/2-week session

### 17-Jul 25

6-week session

### 17-Aug 8

8-week evening session

### 21

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week, 6-week and 8-week sessions\*

### 24-Jul 25

5-week session

### 28

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 5-week session\*

### 28

Last day for summer degree candidates to submit graduation applications to their advisers for August degrees – Academic Campus

Summer degree candidates should follow departmental deadlines – MCV Campus

## JULY 2002

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

### 4

University closed†

### 18-Aug 16

4 1/2-week session

### 26

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 4 1/2-week session\*

### 29-Aug 16

3-week session

### 31

Deadline for students to provide advance written notification to instructors of intent to observe religious holidays – 3-week session\*

## AUGUST 2002

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

### 16

Final date for graduate dean's approval signature on completion of graduate thesis/dissertation for August degree candidates (check with graduate program director regarding internal schedules for submission of copy, defense and school/college dean approval)

### 16

Summer sessions end

Some school and/or departmental calendars may differ from the university's academic calendar. Students should check with their program of study to ensure they follow the appropriate calendar.

\* Reasonable accommodations for completion of work missed should be made for students observing religious holidays. A partial list of major religious holidays is provided on the Web.  
— — — [www.vcu.edu/hr/communications/major%20holidays.htm](http://www.vcu.edu/hr/communications/major%20holidays.htm)

† Subject to approval

# *Letter from the President*

It is my pleasure to welcome you to Virginia Commonwealth University.

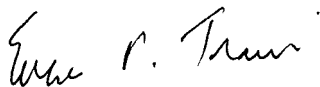
With more than \$113 million in annual research funding, VCU is ranked by the Carnegie Foundation as one of the nation's top research universities and is one of only three such universities in Virginia. In addition, 16 graduate and professional programs have been ranked by U.S. News and World Report as among the best of their kind in the nation. Twelve of these programs are ranked in the top 20.

VCU's impact on education, the economy and the quality of life in the commonwealth of Virginia is significant. Its degree programs encompass the arts, business, education, engineering, the humanities, the sciences, social work and all the health professions. VCU's Medical College of Virginia

Campus and MCV Hospitals are among the most comprehensive in the nation. In collaboration with the business and government communities in the state, the university also is developing the Virginia Biotechnology Research Park, one of the major catalysts for Virginia's emerging biotechnology industry.

When you join VCU, you will be studying with a diversity of students who are pursuing undergraduate, graduate, professional and doctoral degrees. Credit and noncredit courses for full-time and part-time students, and a number of programs available through technology, serve all VCU students. You will benefit from our extensive research and public service, athletic and cultural activities, libraries, and student and recreational centers. Our capable and committed faculty are ready to assist you, augmented by an array of support services designed to help you achieve your potential.

VCU is an extraordinary institution. We are proud to have you here as you pursue your educational goals.



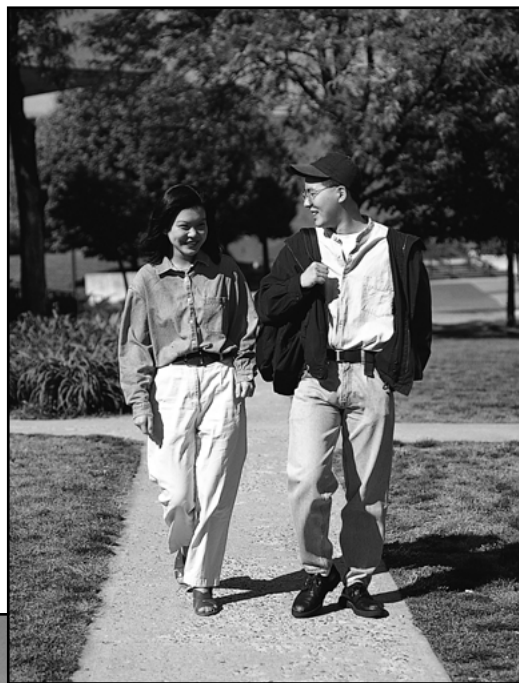
Eugene P. Trani  
President



# Virginia Commonwealth University

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**Situated in the heart of Richmond, Va.,  
VCU embraces diversity by recognizing  
its heritage and celebrating its  
advancements in innovative research.**



**President's Office**  
**910 W. Franklin St. • P.O. Box 842512**  
**Richmond, VA 23284-2512**  
**(804) 828-1200, Fax (804) 828-7532**  
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**Dr. Eugene P. Trani**  
 President

## The university community

With more than \$113 million in annual research funding, Virginia Commonwealth University is ranked by the Carnegie Foundation as one of the nation's top research universities and is one of only three such universities in the commonwealth. VCU's teaching, research, public service and patient care mission supports full-time and part-time students and faculty of diverse backgrounds. The university also contributes to the local, state, national and international communities through its scholarly activities, its diverse educational programs, and its public service and patient care initiatives.

Located in Richmond, the capital of Virginia, VCU is composed of two campuses. The 75-acre Academic Campus is situated in Richmond's historic Fan District. The 51-acre Medical College of Virginia Campus, which includes MCV Hospitals, is located two miles east in the financial, commercial and governmental district of downtown Richmond. Of the university's 151 buildings, 32 were built before 1900. Fifty-four buildings are national historic landmarks or lie within a historic district.

VCU was established in 1968 by an act of the Virginia General Assembly, which merged the Medical College of Virginia with Richmond Professional Institute to form the new university.

MCV was founded in 1838 as the medical department of Hampden-Sydney College. It became an independent institution in 1854. In 1860, when Virginia appropriated \$30,000 for MCV's first hospital, it became a state-supported institution.

RPI was established in 1917 as the Richmond School of Social Work and Public Health. In 1925, it became the Richmond Division of the College of William and Mary. Its name was changed to RPI in 1939; in 1962, it separated from

William and Mary, becoming an independent state institution.

VCU is governed by a 16-member Board of Visitors appointed by the governor of Virginia. Board members, who come from the business, professional, civic and health-care communities of Virginia, serve four-year terms. Members may be appointed for an additional four-year term at the governor's discretion.

VCU is organized into the divisions of Academic Affairs (which includes the Provost's Office and Graduate Studies), Advancement, External Relations, Finance and Administration, Health Sciences, and Research. The university offers 153 baccalaureate, master's, professional, doctoral and post-graduate certificate degree programs through the College of Humanities and Sciences, which includes the School of Mass Communications, and the schools of Allied Health Professions, the Arts, Business, Dentistry, Education, Engineering, Medicine, Nursing, Pharmacy and Social Work. Forty of the university's programs are unique in Virginia. In addition, 16 graduate and professional programs have been ranked by U.S. News and World Report as among the best of their kind in the nation. Twelve of these programs are ranked in the top 20.

VCU's programs include the Bachelor of Interdisciplinary Studies offered through the College of Humanities and Sciences and the Master of Interdisciplinary Studies offered through the School of Graduate Studies. Several programs also provide off-campus students the opportunity to earn degrees through telecommunications and instructional technology.

More than 23,400 students attend VCU, and each year the university award approximately 4,000 degrees. Thirty percent of VCU's students represent minority groups, 61 percent are women, and 39 percent are part-time students. The student body represents 48 states and 68 different countries; in fall 1999, 528 international students enrolled at the university.

With an annual budget of more than \$1 billion, VCU and its affiliate organizations constitute a significant economic enterprise in the Richmond area. More than 14,500 faculty and staff, including 1,612 full-time faculty and 5,806 classified staff, make the university and the teaching hospital the city's

single largest employer. Employees and students together spend approximately \$322 million a year in the local economy. MCV Hospitals and VCU's physicians provide more than \$100 million worth of indigent health-care services annually. Two-thirds of VCU's 107,000 alumni live and work in Virginia.

VCU's economic impact includes a master-site plan that calls for capital expansion into under-used sections near the campuses. The plan has established architectural guidelines for future construction, which were developed in collaboration with the surrounding community. Current projects under construction represent more than \$127 million, and the value of authorized projects is nearly \$63 million.

VCU is in progress with A Strategic Plan for the Future of Virginia Commonwealth University, a long-range planning initiative begun in 1993 and now in its second phase. The goal of VCU's strategic plan is to enhance its stature as one of the nation's leading research universities as well as to continue its contribution to community and individual development, particularly through collaborative initiatives and partnerships with the community.

One of the university's recent strategic collaborations is the School of Engineering, which has been an important factor in attracting the microelectronics industry to Virginia along with the Virginia Microelectronics Center, also based at VCU. The university is developing the Virginia Biotechnology Research Park in collaboration with business, civic and government leaders. When it is fully developed, the Research Park will cover 34 acres in downtown Richmond and employ an estimated 3,000 professional and technical personnel.

VCU's MCV Campus supports the Massey Cancer Center, a National Cancer Institute-designated center; the Ambulatory Care Center; and a number of partnerships within the greater health-care community that support VCU's mission of health-care education, research and patient care. The campus' affiliated Medical College of Virginia Hospitals is one of the most comprehensive teaching hospitals in the country. It has been ranked in the annual study, 100 Top Hospitals: Benchmarks for Success, which identifies U.S. hospitals



that deliver the highest quality and most cost-efficient health care.

In 1999, VCU met the \$125-million goal of its second comprehensive fund-raising campaign, Partners for Progress, by attracting nearly \$168 million in contributions.

### Alumni of the university

VCU has 105,000 alumni, almost a third of whom are graduates of the MCV Campus. More than 40,000 alumni live in the Richmond metro area and 60,000 live in Virginia, contributing to its growth and quality of life.

Among its alumni, VCU can count a Nobel Prize winner, an Oscar winner and several Emmy winners, CEOs of national corporations, a current best-selling author, a White House interior designer, and many others whose accomplishments are well known. Just as important, VCU graduates make up the majority of pharmacists and dentists in Virginia, a major proportion of the state's nurses and physicians, many of its teachers, artists and performers, and its law enforcement personnel. VCU alumni are striving and achieving in every field of endeavor, using the knowledge and experience they gained at VCU and building pride in their university.

Alumni support their university through the VCU Alumni Association and the MCV Alumni Association of VCU along with groups such as the African-American Alumni Council and the Association of Real Estate Alumni. Among the associations' many services are their two alumni magazines, Shafer Court Connections for graduates of the Academic Campus and Scarab for MCV Campus alumni. The MCV Alumni House and Paul A. Gross Conference Center provide meeting and event space daily for faculty, students and university administrators as well as for alumni gatherings while the VCU Alumni Association Board Room in the University Student Commons serves all campus groups. In late spring 2000, the VCU Alumni House opened at 924 W. Franklin St. providing additional meeting space and service.

Reunions, student recruitment and mentoring, externships, professional workshops and networking events, recognition programs honoring alumni and student achievement, parents' weekends, and commencement breakfasts are some of the programs alumni

plan and participate in to support their university. Both associations support a variety of scholarships and are planning more endowments for the years ahead. The VCU Alumni Association has raised \$500,000 and pledged another \$500,000 as the challenge amount for a \$3.8 million merit scholarship endowment. Alumni chapters are beginning to form as the newest method of reaching out to alumni in cities across the country. Among the many services that the associations offer alumni are group major medical, life and auto insurance, low-cost affinity credit cards, international travel and tours, and excellent discounts on national hotel and rental car firms.

For further information about the MCV Alumni Association, call (804) 828-3900; for the VCU Alumni Association, call (804) 828-2586; for both associations, e-mail at [vcu-alum@vcu.edu](mailto:vcu-alum@vcu.edu) or browse the VCU alumni Web site for additional information.

— — — [www.vcu.edu/alumni](http://www.vcu.edu/alumni)

### Mission of the university

VCU is a public, metropolitan, research university, supported by Virginia to serve the people of the state and the nation. The university provides a fertile and stimulating environment for learning, teaching, research, creative expression and public service. Essential to the life of the university is the faculty actively engaged in scholarship and creative exploration activities that increase knowledge and understanding of the world and inspire and enrich teaching.

The university is dedicated to educating full-time and part-time students of all ages and backgrounds in an atmosphere of free inquiry and scholarship so they may realize their full potential as informed, productive citizens with a lifelong commitment to learning and service.

The university serves the local, state, national and international communities through its scholarly activities, its diverse educational programs, and its public service activities. As an institution of higher learning in a metropolitan center that also is the state capital, the university enjoys unique resources that enrich its programs. The university also contributes its intellectual and creative expertise in the development of

innovative approaches to meet the changing needs of our society.

The goals of VCU in carrying out its mission are:

- to provide undergraduate education that includes a broad and rigorous foundation in the arts, sciences, and humanities, and explores the ideas and values of humankind,
- to offer nationally and internationally recognized professional and graduate programs leading to doctoral, master's, and other terminal and advanced degrees in the professions, sciences, humanities and arts,
- to foster a scholarly climate that inspires creativity, a free and open exchange of ideas, critical thinking, intellectual curiosity, freedom of expression and intellectual integrity,
- to expand the boundaries of knowledge and understanding through research, scholarship, and creative expression in the sciences, arts, humanities and professional disciplines,
- to value and promote racial and cultural diversity in its student body, faculty, administration, and staff to enhance and enrich the university,
- to develop and sustain a faculty of the highest quality by providing an environment conducive to their achieving and maintaining national and international stature and by continuing to attract both recognized scholars and other outstanding individuals with a high potential for scholarly achievement and excellence in teaching,
- to provide an optimal environment for educating and training health care professionals, for conducting research to improve health care and delivery, and for meeting the needs of patients and the community in a comprehensive health care setting,
- to use the urban environment as a laboratory for studying and developing new approaches to problems pertaining to the public and private sectors,
- to support (through its commitment to public exhibitions, performances, and other cultural activities) the imaginative power

of the liberal, visual and performing arts to express the problems and aspirations of humanity and to enrich the lives of individuals,

- to develop innovative programs for continuing education that establish permanent intellectual connections between the university and its constituents, enhance professional competence, and promote dialogue on public issues,
- to offer diverse opportunities for individuals to benefit from higher education through a variety of avenues including flexible scheduling for part-time undergraduate and graduate students, open admission for nondegree-seeking students with appropriate preparation, advanced degree programs for working professionals, selected programs in diverse locales, admission of graduates with appropriate associate degrees in arts or sciences, and support programs for specially admitted students,
- to promote interdisciplinary studies within the university to bring new perspectives to bear on complex problems, and mobilize creative energies and expertise in meeting the needs of society and individuals through its unique role as Virginia's major urban university.

### MCV Campus Mission

The MCV Campus is an integral part of VCU. The five academic schools and teaching hospital of the MCV Campus serve the needs of the citizens of Virginia for:

- transmission of knowledge related to health services,
- continuity in the supply of health-care professionals,
- accessibility to comprehensive and quality health-care services,
- development and dissemination of new knowledge for the advancement of the health sciences.

The MCV Campus is committed to educational programs directed toward meeting the state's health needs. Programs are dedicated to maintaining and updating the competency of health professionals as well as preparing graduates to enter the health professions. Educational programs are supported by several academic disciplines, the teaching hospital, carefully selected off-campus

health facilities, and an institutional commitment to effective teaching.

The MCV Campus also is committed to a comprehensive program of patient care: to demonstrate excellence in practice as a model for students, to provide a base of study designed to improve patient care, to meet the needs of patients in its hospital's service area, and to offer highly specialized services in clinical areas of demonstrated expertise.

The MCV Campus' research programs are designed to develop new knowledge in areas ranging from the molecular level through clinical procedures to health-care delivery and outcomes. Their goal is to serve as a model for students in the spirit of inquiry and the application of the scientific process to patient care, and to focus interdisciplinary effort on problems amenable to the scientific approach.

### Virginia Commonwealth University Health System Authority

In April 1996, Gov. George Allen signed a bill that officially transferred the operations, employees and obligations of the Medical College of Virginia Hospitals to the Medical College of Virginia Hospitals Authority. This transfer occurred on June 30, 1997.

The authority assumes the obligations of MCVH as well as the mission of operating the MCV Hospitals as teaching hospitals for the benefit of the schools of the Health Sciences Division of VCU, and of providing high-quality patient care and a site for medical and biomedical research in close affiliation with the Health Sciences Division of VCU.

In winter 2000, the Virginia General Assembly and Gov. James Gilmore authorized the establishment of the Virginia Commonwealth University Health System Authority. This legislation modified the existing MCV Hospitals Authority by integrating the clinical missions of MCV Hospitals, MCV Physicians and the School of Medicine.

### Academic organization

VCU is organized into a college, schools and departments offering undergraduate, professional and graduate programs. The dean's office of each school provides the general coordination of the academic departments and programs within the school. Listed are

the schools with their respective departments and programs.

#### College of Humanities and Sciences

School of Mass Communications  
advertising and public relations  
news-editorial and broadcasting  
Program in African-American Studies  
Department of Biology  
Department of Chemistry  
Department of Criminal Justice  
Department of English  
Program in Environmental Studies  
Department of Foreign Languages  
French  
German  
Spanish  
comparative literature  
Department of History  
Program in International Studies  
Department of Mathematical Sciences  
applied mathematics and mathematics  
computer science  
operations research and statistics  
Department of Military Science  
Department of Philosophy and Religious Studies  
Program in Judaic Studies  
Department of Physics  
Department of Political Science and Public Administration  
Department of Psychology  
Interdisciplinary Degree Program in Science  
Department of Sociology and Anthropology  
Department of Urban Studies and Planning  
environment  
geography  
information systems  
planning  
public policy and social change  
public management  
Preparation for Professional Studies in the Health Sciences  
clinical laboratory sciences  
clinical radiation sciences  
dental hygiene  
dentistry  
medicine  
nursing  
occupational therapy  
optometry  
pharmacy  
physical therapy  
veterinary medicine  
Preparation for Professional Studies in Law  
Program in Women's Studies

#### School of Allied Health Professions

Department of Clinical Laboratory Sciences  
Department of Gerontology  
Department of Health Administration  
Department of Nurse Anesthesia  
Department of Occupational Therapy  
Program in Patient Counseling  
Department of Physical Therapy

Department of Radiation Sciences  
Department of Rehabilitation Counseling

### School of the Arts

Art Foundation Program  
Department of Art Education  
Department of Art History  
    art historical  
    architectural history  
    museum studies  
    art historical/studio  
Department of Communication Arts and Design  
    Communication Arts Program  
        digital imaging  
        illustration  
        kinetic imagery  
        three-dimensional modeling  
    Communication Design Program  
        art direction  
        graphic design  
        interactive multimedia design  
        typographic design  
        three-dimensional design  
Department of Crafts  
    ceramics  
    fiber/fabric design  
    glassworking  
    jewelry/metalsmithing  
    wood/furniture design  
Department of Dance and Choreography  
Department of Fashion Design and Merchandising  
    fashion design  
    fashion merchandising  
Department of Interior Design  
Department of Music  
    performance  
    composition  
    music education  
Department of Painting and Printmaking  
    painting  
    printmaking  
Department of Photography and Film  
    filmmaking  
    still photography  
Department of Sculpture  
Department of Theatre  
    performance  
    design/technical  
    theatre education

### School of Business

Advanced Program  
Business Foundation Program  
Department of Accounting  
Department of Economics  
Department of Finance, Insurance and Real Estate  
    finance  
    insurance/risk management  
    real estate and urban land development  
Department of Information Systems

Department of Management  
    business administration and management  
    human resource management/industrial relations  
Department of Marketing and Business Law

### School of Dentistry

Division of Dental Hygiene  
Department of Endodontics  
Department of General Practice  
Department of Oral Pathology  
Department of Oral and Maxillofacial Surgery  
Department of Orthodontics  
Department of Pediatric Dentistry  
Department of Periodontics  
Department of Prosthodontics

### School of Education

Division of Educational Studies  
    educational foundations  
Division of Health, Physical Education and Recreation  
    Health, Physical Education and Exercise Science  
        athletic training  
        community wellness  
        kinesiotherapy  
    Recreation, Parks and Tourism  
        recreation and park management  
        sport management  
        therapeutic recreation  
Division of Teacher Education  
    in cooperation with the College of Humanities and  
    Sciences Extended Teacher Preparation Programs  
        Early Childhood/Elementary Education P-6  
        Middle Education 4-8  
        Secondary Education 6-12  
        biology  
        chemistry  
        English  
        French  
        general science  
        German  
        history/social science  
        mathematics  
        physics  
        Spanish  
    Special Education K-12  
        emotional disturbance  
        mental retardation

### School of Engineering

Biomedical Engineering Program  
Mechanical Engineering Program  
Chemical Engineering Program  
Electrical Engineering Program

### School of Graduate Studies

Interdisciplinary Studies  
    Biotechnology (under development)  
    Environmental Studies  
    Interdisciplinary Off-Campus Arts  
    Individualized Programs of Study (including cooperative  
        ventures with Virginia State University)

### School of Medicine

Department of Anatomy  
Department of Anesthesiology  
Department of Biochemistry and Molecular Biophysics  
Department of Biostatistics  
Department of Dermatology  
Department of Emergency Medicine  
Department of Family Practice  
Department of Human Genetics  
Department of Internal Medicine  
Department of Legal Medicine  
Department of Microbiology and Immunology  
Department of Neurology  
Department of Obstetrics and Gynecology  
Department of Ophthalmology  
Department of Orthopedic Surgery  
Department of Otolaryngology  
Department of Pathology  
Department of Pediatrics  
Department of Pharmacology and Toxicology  
Department of Physical Medicine and Rehabilitation  
Department of Physiology  
Department of Preventive Medicine and Community Health  
Department of Psychiatry  
Department of Radiation Oncology  
Department of Radiology  
Department of Surgery

### School of Nursing

Department of Adult Health Nursing  
Department of Maternal-Child Nursing  
Department of Nursing Systems, Community and  
    Psychiatric Mental Health

### School of Pharmacy

Department of Medicinal Chemistry  
Department of Pharmacy  
Department of Pharmaceuticals

### School of Social Work

Baccalaureate Social Work Program  
Master of Social Work Program  
Ph.D. in Social Policy and Social Work Program

### Center for Environmental Studies

Interdisciplinary Studies

### Center for Public Policy

Public Policy and Administration

## Undergraduate and professional degree programs

### Bachelor of Arts Degrees

art history  
English  
fashion  
foreign languages/French  
foreign languages/German  
foreign languages/Spanish  
foreign languages/comparative literature  
history

music  
 philosophy  
     ethics and public policy  
 political science  
 religious studies

#### **Bachelor of Fine Arts Degrees**

art education  
 art history  
 communication arts and design  
 crafts  
 dance and choreography  
 fashion  
 interior design  
 painting and printmaking  
 photography and film  
 sculpture  
 theatre  
 theatre education

#### **Bachelor of Interdisciplinary Studies Degree**

#### **Bachelor of Music Degrees**

performance  
 composition  
 music education

#### **Bachelor of Science Degrees**

accounting  
 biology  
 business administration and management  
     business administration  
     entrepreneurship and small business management  
     international management  
     operations management  
 chemistry  
 clinical laboratory sciences  
 clinical radiation sciences  
 computer science  
 criminal justice  
 dental hygiene  
 economics  
 engineering  
     biomedical  
     chemical  
     electrical  
     mechanical  
 finance  
     finance  
     insurance/risk management  
 health education  
 human resource management/industrial relations  
 interdisciplinary degree program in science  
 information systems  
     client/server  
     decision support technologies  
     information engineering  
     network management  
 marketing and business law  
 mass communications  
 mathematical sciences/applied mathematics  
 mathematical sciences/computer science

mathematical sciences/mathematics  
 mathematical sciences/operations research  
 mathematical sciences/statistics  
 nursing  
 physical education  
 physics  
 psychology  
     urban psychology  
 real estate and urban land development  
 recreation, parks, and tourism  
 science  
     environmental studies  
     general science  
     biology  
     chemistry  
     mathematical sciences  
 sociology and anthropology  
 urban studies and planning

#### **Bachelor of Social Work Degree**

#### **Doctor of Dental Surgery Degree**

#### **Doctor of Medicine Degree**

#### **Doctor of Pharmacy Degree**

See Part VII for a list of certificate programs, minors and other special academic programs and services.

For a complete list of academic degree programs, see the academic program's section of this bulletin.

### **Introduction to the university**

#### **Jean M. Yerian**

Associate Dean of Student Affairs

VCU 101 Introduction to the University is a one-credit course that all entering undergraduate students are encouraged to take. This 10-week course is taught by faculty and student affairs administrators in small-class settings. Students assess their expectations and evaluate their academic strengths and career goals. Through lectures, guest speakers and individual projects, students discover the VCU resources and services designed to help them solve problems and achieve a personally rewarding and successful academic program.

Having completed this course, students will better understand their fit as new members of the VCU community. This course is coordinated by the Associate Dean of Student Affairs, Virginia Commonwealth University, P.O. 843017, Richmond, VA 23284-3017, (804) 828-7525. For further information on

first-year student services, see Part IV of this bulletin.

#### **VCU1 101 Introduction to the University**

Semester course; 1 lecture hour. 1 credit. A course to orient new students to the rich tradition and purposes of a university education. Students will assess their expectations and evaluate their academic strengths and career goals. Through lectures, guest speakers, and individual projects, students will discover the VCU resources and services designed to help them solve problems and to achieve a personally rewarding and successful academic program.

### **Undergraduate General Education Program**

VCU's Undergraduate General Education Program represents those learning objectives deemed important for all undergraduate students regardless of their major area of study. The goal of the program is to ensure that students acquire the intellectual skills and breadth of knowledge that will not only contribute to the success of their undergraduate studies but will prepare them for the challenges and opportunities of the 21st century. The university has identified a series of broad educational commitments as well as seven specific curricular elements that constitute the Undergraduate General Education Program.

The following statements are commitments of the university:

1. Students can expect to learn the elements of clear thinking and to be nurtured in their development as careful, critical and creative thinkers.
2. Students can expect to learn how to access, retrieve, evaluate and synthesize information in various formats (bibliographic, graphic, numeric, spatial, textual, etc.) through up-to-date means relative to their studies at every level.

The VCU Mission states that the university is dedicated to educating students in an atmosphere of free inquiry and scholarship, so that they may realize their full potential as informed, productive citizens with a lifelong commitment to learning and service. The best mechanism for fostering a commitment to lifelong learning among students is to promote self-examination and to motivate them to seek the life of the mind by immersing them in exciting learning in a variety of venues among dedicated scholars in the arts, the humanities, the sciences and their myriad applications.

A third commitment of the university is to foster lifelong learning:

3. Students can expect guidance in developing the habit of self-examination and help in becoming self-actuated lifelong learners.

Issues-oriented or thematic courses offer an integrated approach to certain fundamental human problems while requiring students to grapple with important issues of our day. To ensure that students have access to issues-oriented courses, the university makes the following commitment:

4. Students can expect to be able to achieve part of their general education through interdisciplinary courses addressing major issues of our day. The courses will integrate, rather than isolate, various disciplinary approaches to learning and understanding.

VCU has identified seven curricular elements for general education:

#### 1. Communicating

Students should demonstrate effective oral and written communication skills. Beyond the general basic knowledge of

composition and rhetoric, the student should learn the standards of communication within the student's own discipline.

#### 2. Ethics

Students should demonstrate an understanding of the main concepts and theories of ethics and the role they play in our public and private lives at both the professional and personal levels. Students should be able to examine their fundamental moral beliefs, to form rational arguments and judgments relative to ethics, and to enable them to act on their values to make ethical choices.

#### 3. Quantity and form

Students should be able to quantify or represent information symbolically. Students should be able to use such codified information with respect to questions of size, proportion or order, and to analyze it or manipulate it in a manner consistent with the standards of the student's own discipline.

#### 4. Science and technology

Students should demonstrate some understanding of and experience with the processes and concepts of modern experimental science and the impact of science and technology on society.

#### 5. Interdependence

Students should be able to demonstrate an awareness of the cultural, economic, informational and social interdependencies that exist among nations and cultures today.

#### 6. Visual and performing arts

Students should demonstrate an enhanced understanding of and experience in the various visual and performing arts which represent and express the complexities of the human condition.

#### 7. Humanities and social sciences

Students should demonstrate an appreciation of the varieties and complexities of human cultures and values as expressed through literary, religious, historical and philosophical works. They also should demonstrate an understanding of individual and collective behavior as structured through political, economic, social and cultural institutions.

Beginning with the class entering in fall 1997, students are subject to these general education requirements.

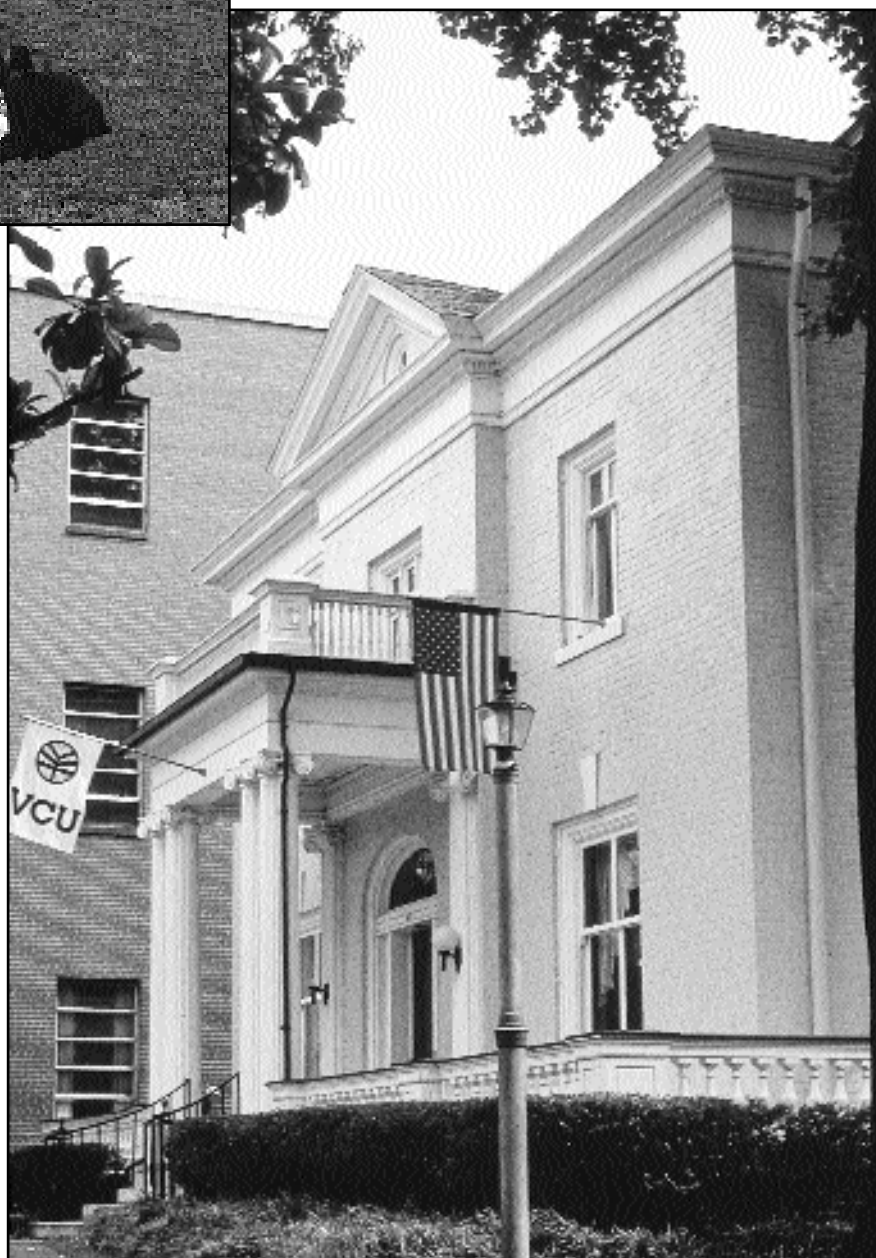


# Admission to the University



**Admission to VCU can be your entrance into an environment filled with successful academic reputations, world-renowned scholars, and a joyful and diversified campus life.**

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**Undergraduate Admissions**

821 W. Franklin St. • P.O. Box 842526  
 Richmond, VA 23284-2526  
 (800) 841-3638, (804) 828-1222  
 Fax (804) 828-1899  
[www.vcu.edu/ugrad](http://www.vcu.edu/ugrad)

**MCV Campus Undergraduate Admissions**

1101 E. Marshall St. • P.O. Box 980632  
 Richmond, VA 23298-0632  
 (804) 827-0152 • Fax (804) 828-2573

[www.vcu.edu/admissions/mcv/mcvindex.htm](http://www.vcu.edu/admissions/mcv/mcvindex.htm)

MCV Campus Professional Programs: refer to sections on the schools of Dentistry, Medicine and Pharmacy for admission information

**VCU Welcome Center**

West Broad Street Parking Deck  
 1111 W. Broad St.  
 Richmond, VA 23284-2526  
 (804) 827-2000

**Office of Records and Registration**

827 W. Franklin St. • P.O. Box 842520  
 Richmond, VA 23284-2520  
 (804) 828-1341 • (804) 828-1349  
 Fax (804) 828-2573

**General policy governing admissions and enrollment**

As a comprehensive, metropolitan, public institution, Virginia Commonwealth University seeks to provide excellent higher education for those who will profit from an intellectually challenging experience. The university encourages applications from people who are sincere in their desire to study in an environment where excellence in teaching, research, scholarly activities and community services is stressed. VCU also encourages applications from returning adult students whose education may have been interrupted.

Recognizing the value of a diverse student body, the university invites applications from all qualified persons without regard to age, race, color, national origin, gender, religion, sexual orientation, veteran's status, political affiliation or disability. Although the university has a primary responsibility to educate Virginia residents, the value and contribution of a diverse student body is recognized and the enrollment of students from other states and countries is encouraged. Entrance requirements are in full compliance with all applicable federal and state statutes, rules and regulations.

All people admitted to and enrolled in the university are classified as either degree-seeking or special (non-degree seeking) students. Degree-seeking students are presumed to be working toward a degree in approved educational programs, while special students are permitted to enroll in classes on a semester/term basis. Recognizing a commitment to educate students who desire to take courses primarily for self improvement or to continue lifelong education, the university also encourages the enrollment of special (nondegree seeking) students. The university enrolls as many qualified degree-seeking and nondegree-seeking students as resources permit. When resources are limited, spaces go to those who present credentials showing the greatest potential for academic success in degree programs.

The Board of Visitors establishes general admission policies on the recommendation of the university administration. Admission criteria and policies are recommended by the Undergraduate and Graduate Admissions offices as well as the deans of the schools and college of the university on the advice of their faculties. Entrance requirements for schools and the college within the university may differ. Various departments may have unique admission requirements, such as examinations, auditions, portfolios, interviews, licensure or language proficiency, in order to evaluate a student's potential for success in selected programs and courses. The university selects applicants who present the strongest qualifications in scholastic achievement and potential, standardized examinations, and through the review of other evidence of potential. Each applicant is reviewed on an individual basis.

**Graduate school program admissions**

For information about requirements and procedures for admission to graduate study at VCU, see the Graduate Bulletin or contact the School of Graduate Studies at 901 W. Franklin St., Room B1, P.O. Box 843051, Richmond, VA 23284-3051, (804) 828-6916. The Graduate Bulletin is available for purchase at the VCU bookstores or may be accessed in its entirety via the Internet.

— — — [www.vcu.edu/bulletins](http://www.vcu.edu/bulletins)

**Categories of student enrollment**

VCU provides a variety of ways in which a student may pursue a course of study.

**Degree-seeking student**

This student has fulfilled the admission requirements of the university and a particular school and is enrolled in a bachelor's (four-year) degree program or a health sciences preparatory program. A degree-seeking student may engage in studies as either a full-time student (12 credits or more per semester) or as a part-time student and may enroll for day and/or evening classes.

Furthermore, a degree-seeking student may pursue a program of study in one of the following ways:

**1. As a declared departmental major in a school or college.**

The student who declares a specific major when entering VCU begins a course of study leading to a degree in the declared major. (The student may change the major at a later date.)

**2. As an undeclared student.**

Students who have not selected a specific major, may select the "undeclared" category within the College of Humanities and Sciences. Students are advised along general academic lines so they may enroll in courses which will assist them in more clearly defining their academic objectives.

The advising program is flexible enough to suit the interest of any student, yet it is basic to a number of fields of study in different schools. During the first year of study, students are encouraged to investigate various fields until they find a major that suits their interests, needs and goals.

Students must define these goals and declare a major area of study no later than the semester in which they complete 60 credits, generally after two years of study.

**Nondegree-seeking special student**

A student who meets the requirements for undergraduate eligibility may enroll for credit as a special student in day and/or evening classes at



VCU without seeking admission to a degree program.

Undergraduate special students are advised about course selections and aided in educational and vocational planning by the Office of Interdisciplinary Studies and Special Nondegree-seeking Student Advising. Such students are ineligible for financial aid.

Permission to enroll as a special student does not ensure later admission as a degree-seeking student. Continuance in this status is dependent on academic performance, and special students are subject to the continuation regulations stated in Part VI of this bulletin.

The undergraduate special student may pursue course work in one of the following categories:

1. **As a nondegree holder.** This student has not previously earned a baccalaureate degree. The student may take a maximum of 11 credits per semester (part time).
2. **As a degree holder.** This student has previously earned a baccalaureate degree at VCU or another accredited institution and plans to pursue additional undergraduate course work. The student may take a maximum of 19 credits per semester.
3. **As a transient student.** This student is presently seeking a baccalaureate degree at another institution of higher education, is in good standing at that institution and plans to pursue a course of study at VCU for no more than two semesters with the intent of transferring the work back to the home institution to complete the degree. The student may take a maximum of 19 credits per semester and must present a letter from the home institution approving the student's status as a transient student at VCU. (Refer to the "Special Student Guidelines" in this section of this bulletin).

Credits earned as a special student are recorded on the student's permanent academic record. There is no limit placed on the number of credits that can be earned in this classification. Special students who wish eventually to earn a baccalaureate degree at VCU are encouraged to seek admission to a degree program before accumulating 22 semester credits.

## Admission guidelines

The credentials of undergraduate applicants for admission to degree status are reviewed on an individual basis. Because the number of applicants who meet the requirements for admission may exceed the number that can be admitted, the university selects those candidates who present the strongest qualifications in scholastic achievement and potential as reflected on transcripts and test scores. Freshman applicants interested in the university's College Transition Program should read the information on the Academic Success Center in this section of this bulletin. Applicants interested in enrolling as special students should read the "Special Student Guidelines" that also appear in this section.

## Freshman undergraduate admission guidelines

An applicant for degree status must be a graduate of an accredited secondary school (or its equivalent) or hold a GED certificate with adequate scores, defined as a composite score of at least 55 on the GED battery. A high school student should submit an application for admission after completion of the junior year, unless applying for the Early Admission or Advanced Scholar programs, in which case the application should be submitted after the sophomore year.

All freshman applicants under the age of 22 are required to submit scores from the Scholastic Aptitude Test (SAT) or American College Test (ACT).

For admission to the College of Humanities and Sciences (including the School of Mass Communications), schools of Business, Education, Engineering or Social Work, at least 20 high school units are required, with the following minimum distribution of subjects: four units in English; three units in mathematics, one of which must be Algebra I and one of which must be geometry or Algebra II; two units in science, one of which must be a laboratory science; and three units of history or social sciences or government. Students are encouraged to present at least two units in a modern or ancient language. Many programs at the university require at least one year of collegiate study in a modern or ancient language for graduation.

In addition, preference is given to candidates who submit the Advanced

Studies Diploma or its equivalent. This diploma requires four units in English; three in social sciences, including world history, United States history and United States government; three units in mathematics (Algebra I, geometry, and Algebra II); three units in science drawn from earth science, biology, chemistry, physics or other advanced science courses; and either three years of one foreign language or two years of two foreign languages.

Applicants seeking admission to programs in the College of Humanities and Sciences (including the preprofessional health-related programs), the schools of Business, Education (especially those interested in the five-year bachelor's/master's program), Engineering and Social Work are encouraged to take additional laboratory science courses in high school. In addition to the basic requirements in mathematics, applicants to programs in engineering, science, computer science and mathematics are encouraged to take additional advanced courses in mathematics.

Freshman applicants planning to pursue a major in the health sciences (radiation sciences, dental hygiene, clinical laboratory sciences, nursing, occupational therapy, pharmacy and physical therapy) are advised to apply to the preprofessional programs of their choice in the College of Humanities and Sciences.

The University Honors Program offers qualified students interested in health science the opportunity for early acceptance into many of the MCV Campus programs.

Freshman applicants who are not admitted with degree status may be eligible to enroll at VCU as special students provided one year has elapsed since their high school graduation date or intended high school graduation date.

## Early decision plan guidelines

Highly qualified fall semester freshman applicants who have selected VCU as their first choice and who meet the Nov. 1 early decision application deadline may be admitted to VCU by Dec. 1. Early decision applications are not processed for the spring semester. The School of Nursing is the only health sciences program offering an early decision plan. Detailed information is available in Part XVII.

### Special student guidelines

The first time a student registers as a special student, he or she must meet the following conditions of eligibility as appropriate to his/her status:

1. be a high school graduate or GED holder for one year before the intended semester of entry, or
2. be an applicant who meets established admission requirements, or
3. be a transfer student who is eligible to return to the former institution or has been out of school for at least one year for a first suspension or five years for the second suspension incurred at any institution, or
4. be a former VCU student who is eligible to return. If the student has been suspended from VCU for academic reasons, eligibility for future enrollment must be re-established in accordance with procedures outlined in the "Readmission Guidelines" section and the suspension policies outlined in Part VI of this bulletin, or
5. be a bachelor's degree holder taking undergraduate courses, or
6. be an eligible transient student. A transient student must present, before or at the time of registration, a letter from the home institution which states that the student is in good standing, has permission to study at VCU for transfer back to the home institution, and which outlines the courses to be studied at VCU, or
7. be a non-U.S. citizen who has been cleared through the Center for International Programs.

**Students are responsible for knowing the terms of eligibility and for stating that they are eligible for special student status.**

The first time a student registers as a special student, proof of eligibility is required. Students may sign an eligibility card stating their eligibility, which is then verified by the Office of Records and Registration. A student also may establish eligibility by providing verification of high school graduation, GED certification or verification that he or she is eligible to return to the previous institution of study.

If the student's eligibility cannot be verified or if the student is found ineligible, the grade on the course taken is changed to no credit (NC). An administrative hold is placed on future registrations until eligibility is established.

Degree-holding special students enrolling in graduate courses should refer to the Graduate Bulletin.

Special students who plan to earn a degree eventually must apply for degree admission and, depending on their credentials, may be required to complete 15 credits with an earned GPA of 2.0 which includes a minimum of two courses (totaling six credits) required by their degree curriculum.

Students studying on foreign visas, because of U.S. immigration and naturalization regulations, are expected to enroll as full-time students and usually are not permitted to enroll as special students.

The Office of Undergraduate Admissions' staff is available to answer general questions, to distribute publications and application forms, and to provide specific information pertaining to the admission process.

Application forms and other admissions information may be obtained by writing or telephoning the Office of Undergraduate Admissions, Virginia Commonwealth University, P.O. Box 842526, Richmond, VA 23284-2526. Telephone toll free 1-800-841-3638 or locally (804) 828-1222, fax (804) 828-1899, visit the office at 821 W. Franklin St., or online.

— — — [www.vcu.edu/ugrad](http://www.vcu.edu/ugrad)

### Evening studies

VCU day and evening programs are academically integrated, and credit earned in the evening program is identical to credit earned during the day. Evening courses are designated by an "E" in the Schedule of Classes published each semester. A student may register for courses in the evening as a degree-seeking or a special (nondegree-seeking) student.

### Admission guidelines for programs requiring specialized supplementary information

**School of the Arts freshman admission guidelines.** The School of the Arts does not have specific high school unit requirements but does require applicants to have graduated from high school or hold a GED. In place of the units, degree applicants must complete the School of the Arts Admissions Packet which is designed to measure the applicant's ability and aptitude for the arts. The packet must

be filed in addition to the University Undergraduate Application for Admission, forming an important part of the basis on which admission evaluation is made. With the exception of fashion merchandising and some concentrations in art history, applicants to the visual arts (including technical/design theatre) are required to complete the drawing and design exercises specified in the packet. Additional artwork should not be submitted unless requested. Applicants to the departments of Dance and Choreography, Music, or Theatre must complete the written information in the packet and are required to participate in an audition arranged by the appropriate department. Applicants to the Department of Music also must show evidence of proficiency in one or more areas of music performance and must take the musicianship placement examination.

### Transfer admission guidelines

Transfer applicants are considered for admission provided they present evidence of good standing at the last institution attended. Although a minimum cumulative grade-point average (GPA) of 2.0 on a four-point scale in all nonremedial credits attempted at all accredited colleges attended is required for admission, preference is given to transfer applicants presenting a GPA of at least 2.25. Transfer candidates who have earned fewer than 30 semester credits/45 quarter credits and who are 21 years of age or younger must submit the SAT or ACT results and also must meet specific guidelines listed in the Freshman Admission Guidelines section.

Some programs have additional requirements for admission as a transfer student. For example, transfer applicants to the schools of the Arts, Business, Engineering and Mass Communications on the Academic Campus, and to the health science programs on the MCV Campus should consult the appropriate section of this bulletin for admission requirements.

Transfer applicants who are not admitted with degree status may be eligible to enroll as special (nondegree-seeking) students as determined by the Office of Undergraduate Admissions.

**Transfer applicants ineligible to return to a former institution because of an academic suspension may not enroll at VCU for a period of one year for the first suspension**

**and five years for the second suspension.**

Transfer applicants who have been suspended from another institution for nonacademic or disciplinary reasons are referred to the Office of the Vice Provost for Student Affairs for preadmission clearance.

Additional information for transfer students is available in the VCU Transfer Guide or on the Web.

— — — [www.vcu.edu/ugrad/bdocs/transfer.html](http://www.vcu.edu/ugrad/bdocs/transfer.html)

**State policy on transfer agreement between Virginia Community Colleges and Richard Bland College**

VCU welcomes applications from Virginia Community College and Richard Bland students who have earned the Associate in Arts, Associate in Science or Associate in Arts and Science degrees.

**Students holding these degrees will have junior standing and will be considered to have met all lower-division general education requirements** for Academic Campus programs with the exception of certain lower-level and upper-level program requirements which also apply to native students. Students should closely follow the detailed course suggestions offered in the VCU Transfer Guide for Virginia Community Colleges and Richard Bland College. By selecting certain courses to fulfill requirements within the A.A., A.S. or A.A.&S. degree programs, additional lower division courses needed after transfer to VCU can be held to a minimum. A maximum of 63 semester credits (68 credits prior to fall 1997) can be accepted from the A.A., A.S. or A.A.&S. degrees.

Additionally:

- Students must make proper application for admission to VCU.
- Only credits applied toward the receipt of the associate degree will be accepted, not to exceed 68 hours (only 63 credits starting fall 1997).
- Credits needed to meet major prerequisites will be based on the Course Equivalency Guide or agreements resulting from program to program transfer agreements.
- Students will not be required to repeat courses that have been satisfactorily completed at a Virginia community college except in cases where special restrictions apply to all students.

- Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as native students.

For students with the A.A., A.S. or A.A.&S. degrees from a VCCS institution or Richard Bland College, VCU degree requirements in effect at the date of the student's admission to the VCCS or Richard Bland College associate degree program will be used in certifying the student for graduation if the student has not interrupted his/her associate degree more than two consecutive semesters (excluding summer sessions).

Requirements of native students which would apply to associate degree-holders are:

1. Freshman English: All B.A. and B.S. programs in the College of Humanities and Sciences, schools of Social Work, Nursing, Allied Health Professions and the Program in Dental Hygiene require completion of ENG 111-112 (VCU ENGL 101-102 or VCU ENGL 101-200) with at least "C" grades in both courses or repeat the course(s) at VCU.
2. All B.A. and B.S. programs in the College of Humanities and Sciences require competency through the elementary level of a foreign language; English, history and political science majors through the intermediate level.
3. The School of Social Work requires a 2.5 GPA for admission to upper-level courses. The schools of Business and Mass Communications require a 2.25 GPA (except for the Department of Information Systems which requires a 2.75 GPA) for admission to upper-level course work.
4. For students pursuing a career in early, middle, special or secondary education through the Extended Teacher Preparation Program of the College of Humanities and Sciences and the School of Education, a 2.5 GPA and successful completion of the PRAXIS I examination are required for entry into Teacher Preparation, a stage in the program after the student has complete 60 credits. For students applying to majors in the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for

performance applicants are required.

5. The professional baccalaureate programs in Social Work, Nursing, Allied Health Professions, the Dental Hygiene program in the School of Dentistry and the doctoral program in the School of Pharmacy have specific program-related lower-level requirements which must be completed to make proper application and to achieve success in the program, if admitted. They are not "general education" requirements in the traditional sense of the word. These courses are offered at almost all VCCS institutions and are widely publicized.

The health, physical education and exercise science, and the recreation and parks programs have specific lower-level requirements related to state-approved program status, professional certification and entry into the practicum sequence. Specified science courses are prerequisite for entry into upper-level kinesiology and exercise courses. While some flexibility is available in the transfer of some other courses into the lower-level part of the programs, the first two years of the health, physical education and exercise science, and the recreation and parks programs are not traditional general education as mentioned in the previous paragraph.

6. Transfer work from some occupation-technical programs is reviewed under specific conditions for the Bachelor of Interdisciplinary Studies program and the special program in nursing for community college R.N. degree-holders who wish to complete the bachelor of science in nursing.
7. All students transferring to a major in the College of Humanities and Sciences must complete the Computer Literacy Evaluation Test, even if the student has completed a transfer computer science course. Information about the test is available on the College of Humanities and Sciences Web site.  
— — — [www.has.vcu.edu](http://www.has.vcu.edu)
8. Students wishing to transfer to the School of Engineering must have a 3.0 GPA with no grades below a "C." Also, "B" grades or

better must be attained in mathematics, science or engineering courses to be considered for transfer. Transfer students from the Virginia Community Colleges System will follow existing articulation agreements.

Detailed information about the Transfer Module and Virginia Community College/VCU and Richard Bland College/VCU transfer equivalent courses is available on the Web.

— — — [www.vcu.edu/ugrad/bdocs/transfer.html](http://www.vcu.edu/ugrad/bdocs/transfer.html)

### Re-admission guidelines

Re-admission is subject to individual degree program requirements. Contact the program department or consult the appropriate program portion of this bulletin for specific information.

Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for that semester. Students who have not attended VCU for four or more successive semesters (including summer) may submit an application for readmission to the Office of Undergraduate Admissions. **Students who have attended another institution or who have been suspended since their last enrollment at VCU also must apply for re-admission.** This application must be done before the application submission date for the semester in which the student plans to return.

Students who wish to return to VCU after enrolling at another institution are considered transfer applicants and are reviewed for admission based on the transfer admission guidelines related to good standing and cumulative GPA. Students who attend another institution during periods of suspension from VCU are considered re-admitted students for admission purposes and, on their return, assume their VCU GPA and academic status.

Re-admission applicants who wish to change their majors may be required to meet additional requirements for some programs. Applicants to the School of the Arts must submit the School of the Arts Admissions Packet.

Students may apply for re-admission to VCU for the semester following completion of the first suspension period (two semesters, one of which may be summer). Under certain circumstances,

students may be considered for readmission from the second and final suspension after a period of five years. Students on second suspension who wish to return before the required completion of the five-year suspension period must appeal their re-admission to the Academic Regulations Appeals Committee. Students should contact the dean's office of the school or college from which they were suspended to initiate this process. For more information on suspension policies, refer to Part VI of this bulletin.

Applicants who have been suspended from the university for nonacademic or disciplinary reasons are referred to the Office of the Vice Provost for Student Affairs for preadmission clearance.

### International student admissions

VCU encourages qualified international students, both immigrant and nonimmigrant, to seek admission to the university. See Part XX for guidelines.

### Admission procedures

It is the responsibility of the applicant to ensure that all required admission documents are forwarded to the Office of Undergraduate Admissions before the deadline. (Refer to the "Undergraduate Application Deadlines" section in Part II of this bulletin.).

Applications and supporting credentials for programs offered on the Academic Campus must be submitted to the Office of Undergraduate Admissions, Virginia Commonwealth University, P.O. Box 842526, Richmond, VA 23284-2526; telephone (804) 828-1222 or (800) 841-3638.

Applicants to the professional-level health science programs offered on the MCV Campus must have completed a minimum of 30 semester hours of transferable credit from an accredited college or university as specified by the program and must satisfy the prerequisites of the program to which they are applying. Refer to the appropriate section of this bulletin for specific admission requirements. Applications and supporting credentials for the professional-level health science programs must be submitted to the appropriate admissions office. (See the schools of Medicine, Dentistry and Pharmacy for specific application instructions.)

All applications and supporting documents become the property of the university and are not returned to the applicant. After all required documents have been received, candidates are notified of the decision by the appropriate admissions office.

The following must be submitted to the Office of Undergraduate Admissions when applying for an undergraduate degree program:

#### 1. Official Application Form.

Candidates seeking admission or readmission to the university in an undergraduate degree program must file an official Application for Undergraduate Admission, signed by the applicant, before the specified deadline. Students planning to complete a second baccalaureate degree also must submit this application. Care should be taken to read the admissions guidelines in this bulletin, to follow the directions accompanying the application, and to complete all information requested. Incomplete or incorrect applications will result in a processing delay.

2. **Application fees.** Application fees are nonrefundable and should be submitted by check or money order with the application for admission. Do not submit cash. The application fee is \$25. Currently enrolled VCU Academic Campus program students applying to undergraduate MCV Campus programs are not required to remit the application fee. Applications received without the application fee or an approved waiver request will be returned to the sender.

3. **Official transcript(s).** Freshman applicants are required to submit their official high school transcript(s) showing course work completed to date. The secondary school record should contain courses and grades earned, rank in class and overall GPA. A final transcript also is required showing date of graduation, overall GPA and rank in graduating class. **Freshman applicants still in high school are encouraged to have their guidance counselors submit the Application for Admission with their transcripts.** GED holders must submit their partial high

school transcripts (if high school was attended).

**Transfer candidates** must request the registrar of each college attended to send two official transcripts of their course work. Transfer candidates who have earned fewer than 30 semester credits/45 quarter credits also must submit their secondary school records.

Applicants to professional-level **health science programs** on the MCV Campus must submit official transcripts from all colleges, universities and hospital schools/programs attended. School of Nursing and School of Pharmacy applicants also must submit official high school transcripts.

The Office of Undergraduate Admissions will obtain, for readmission candidates, the student's VCU transcript. Applicants who have attended other colleges since leaving VCU must request the registrar of each college to send official transcripts to the Office of Undergraduate Admissions.

4. **Test scores.** Freshman applicants (high school graduates and GED holders) 21 years of age or younger must submit SAT I or ACT scores and, if applicable, an official copy of their GED scores.

**Transfer applicants** 21 years of age or younger and with fewer than 30 semester/45 quarter credits of college work must submit SAT I or ACT scores.

Applicants to professional-level **health science programs** on the MCV Campus must submit these scores if they have taken either of these tests. Applicants are not required to take either test if they have not already done so. However, all School of Nursing applicants must submit SAT, ACT or GRE scores regardless of age.

**Foreign applicants** whose native language is other than English must submit scores for the Test of English as a Foreign Language in addition to any other test scores required. In general, VCU requires a minimum score of 550 on the TOEFL, but some programs may require a higher TOEFL score. Some MCV Campus programs also

may require TWE (Test of Written English) or TSE (Test of Spoken English) scores.

5. **Supplemental application packets.** Art applicants must submit the School of the Arts Admissions Packet to the School of the Arts, Virginia Commonwealth University, P.O. Box 842519, Richmond, VA 23284-2519.

Applicants to professional-level **health science programs** on the MCV Campus must submit, in addition to the application for admission, the supplemental application materials for the program to which they are applying. All materials are provided in the MCV Campus Application Packet for the program to which the applicant is applying. Refer to the appropriate section of this bulletin for specific admission requirements.

**Foreign applicants** submit the Financial Support Statement with the application for admission in addition to any other supplemental application packets which may be required.

6. **Interviews and auditions.** Applicants to the following programs will be contacted by the program for an interview or audition: clinical laboratory sciences, dance/choreography, engineering, music, nontraditional studies, pharmacy, radiation sciences and theatre. Although interviews are not required for other programs, applicants are welcome to meet with an admissions counselor to discuss their applications. In some cases, however, the Office of Undergraduate Admissions may require an interview of any applicant.

7. **Immunization requirements.** Virginia law requires all full-time students to submit an official certification of immunization to **University Student Health Services** prior to registration. Detailed information on immunization requirements can be found in Part IV of this bulletin.

Note that some MCV Campus programs may require additional immunizations because of high patient contact.

## Admission to the University Honors Program

### Eligibility requirements

The University Honors Program is open to qualified entering freshmen, continuing students who demonstrate excellence after enrolling at VCU, and transfer students who have shown similar ability at other institutions.

1. High school graduates with combined SAT scores of at least 1270 (recentered) who rank in the upper 15 percent of their graduating class or who are the recipients of a VCU Presidential Scholarship are eligible for admission to the University Honors Program automatically upon application. Continuing VCU students or transfer students who have achieved a 3.50 cumulative GPA in 30 college semester hours also are eligible for admission automatically upon application.
2. Academically talented students who do not quite meet the criteria for automatic admission are encouraged to apply. Students are admitted to the University Honors Program on an individual basis by a subcommittee of the Honors Council. The primary condition for acceptance is evidence of sufficient personal commitment and academic ability to do honors level work.

To continue in the University Honors Program, a student must maintain a cumulative GPA of 3.50 or higher. Should a student's cumulative GPA fall below 3.50, the student may be placed on Honors Probation for a semester. Withdrawal from the Honors Program is not noted on the student's permanent record.

Undergraduates from all schools and the college who meet the eligibility requirements are invited to apply. For application materials write to Dr. John F. Berglund, Director, University Honors Program, Virginia Commonwealth University, P.O. Box 843010, Richmond, VA 23284-3010, (804) 828-1803.

### Guaranteed Admission Programs

This series of programs guarantees some honors students admission to the professional-level health sciences program of their choice or to a graduate program in medicine (see the Graduate

Bulletin for specific program information), biomedical engineering, business, criminal justice, education, history, mathematical sciences, physics, psychology, public administration or urban studies. Honors students who receive guaranteed admission generally may enter the program of their choice without test scores required, except for statistical purposes, or further application materials provided they fulfill University Honors Program requirements and satisfy the curricular prerequisites of the program they plan to enter. To maintain guaranteed admission status, honors students must maintain the 3.50 GPA, progress satisfactorily in honors courses and special courses designated by the professional or graduate program they plan to enter.

**Professional Health Sciences Guaranteed Admission Programs.** Entering honors freshmen with a combined SAT score of at least 1270 (from one test date), with neither score below 530, may apply for guaranteed admission to the MCV Campus professional programs in medicine, clinical laboratory sciences, dentistry, dental hygiene, nursing, occupational therapy, pharmacy, physical therapy or radiation sciences. Continuing honors students may apply for a guaranteed seat in the medical or physical therapy program during their sophomore year (note: the option in medicine applies only to freshmen entering VCU in the fall of 2000 and thereafter; contact the University Honors Program for specific details).

**Graduate Studies Guaranteed Admission Programs.** Honors students interested in academic or research careers in anatomy, biochemistry and molecular biophysics, biostatistics, human genetics, microbiology and immunology, pharmacology and toxicology, and physiology are invited to apply for guaranteed admission to the School of Medicine during their sophomore year of college. Programs in this school lead to master of science and doctor of philosophy degrees.

Honors students, if they meet the criteria established by the School of Business, may be guaranteed admission to programs for any of the master's degree programs offered by the School of Business. The master's degrees are valid terminal degrees for careers in management and administration or may be used to satisfy a substantial portion of the requirements for the doctoral program

offered at VCU. High school seniors who have pursued advanced course work and who meet the requirements for full admission to the University Honors Program may apply for guaranteed admission to the combined B.S./M.B.A. program which permits them to complete both degrees in four years.

Students accepted into the University Honors Program who are planning careers as elementary, secondary or special education teachers may receive guaranteed admission to the graduate phase of the university's extended teacher preparation program. In this program, students earn a bachelor's degree in the College of Humanities and Sciences, a master's degree in the School of Education, and satisfy the certification requirements of Virginia and more than 30 other states. The Honors Program in Teacher Preparation strives to develop teachers with outstanding scholarship and sound professional competency.

The College of Humanities and Sciences seeks to attract graduate students of the highest caliber and to prepare them, through research and instruction, to meet local and national needs for highly-trained men and women. Students accepted to the University Honors Program may apply for guaranteed admission to master's degree programs in criminal justice, history, mathematical sciences, physics, psychology, public administration or urban studies. Other programs offering early acceptance into the graduate school through the Honors Program include gerontology, clinical laboratory sciences, nurse anesthesia, physical therapy, rehabilitation counseling and biomedical engineering.

### **Guaranteed Admission Program application procedures**

To be accepted into a Guaranteed Admission Program, a student must be accepted by the university, by the University Honors Program, and by the Admissions Committee of the program the student wishes to enter. A separate application for guaranteed admission is required. The Admissions Committee may require an interview. The application deadline for the Guaranteed Admissions Program into the School of Medicine (M.D. degree) is Dec. 15 of the

year before matriculation at VCU. The deadline for all other programs is Feb. 15.

For additional information about the Guaranteed Admission Programs of the VCU Honors Program, write or call Dr. Anne L. Chandler, Associate Director, University Honors Program, Virginia Commonwealth University, P.O. Box 843010, Richmond, VA 23284-3010, (804) 828-1803, [alchandler@vcu.edu](mailto:alchandler@vcu.edu).

## **Undergraduate application deadlines**

### **Freshman application deadlines**

**Regular decision plan.** All applicants to programs on the Academic Campus must submit their applications for the fall semester by Feb. 1 and for the spring semester by Dec. 1. Applications for admission received after these dates will be considered on a space-available basis. Applicants seeking admission to the Guaranteed Admissions program to VCU's School of Medicine must submit the Guaranteed Admissions Application to the VCU Honors Program by Dec. 15.

**Early decision plan.** Secondary school students with outstanding records applying to undergraduate programs may want to consider VCU's early decision plan. Under this single-choice, binding plan, applicants agree to attend the university if offered admission; and they must withdraw all applications from other institutions if accepted to VCU. The deadline for early decision application is Nov. 1. Acceptances are mailed on Dec. 1. If the university does not offer admission on Dec. 1, the applicant will be automatically reconsidered under the regular admissions process.

### **Transfer application deadlines**

While application deadlines for most programs are June 1 for the fall semester and Dec. 1 for the spring semester, the following application deadlines are established for the programs indicated:

	<b>Fall semester</b>
dental hygiene	Feb 15
nursing	Jan 15
radiation sciences	Feb 1
clinical laboratory sciences	May 15

Applications for admission to the programs listed above (except for the programs in occupational therapy and dental hygiene) received after these deadline

dates will be considered on a space-available basis.

### Admission notification

Freshman applicants accepted to the university for the fall semester are notified by letter of the conditions of their acceptance by April 1 if they meet the Feb. 1 recommended deadline. Freshman applicants who apply under the regular admission process may receive **early notification** of their acceptance if they present exceptional admission credentials. Transfer applicants for the fall semester to programs on the Academic Campus who apply before the June 1 deadline are notified by July 1. **All applicants for the spring semester are notified on a rolling basis.**

Information on advisement and registration procedures, the immunization form and housing information is included with the acceptance letter. Virginia requires that all full-time students enrolling for the first time in any state institution of higher education furnish an immunization record from a qualified licensed physician. New VCU students must submit their immunization form to University Student Health Services.

When an applicant is tentatively accepted to the university, a final transcript is required to complete the individual's admission file. If the official transcript is not received by the end of the fourth week of classes of the semester for which the student was accepted, an administrative hold will be placed on future registrations until the credentials are received establishing the student's eligibility.

**The university reserves the right to rescind offers of admission if the final documents indicate that the applicant no longer satisfies the entrance requirements upon which acceptance was granted.**

### Responding to the offer of admission

Upon responding to the offer of admission, all immunization records should be sent to University Student Health Services.

Fall freshman applicants accepted under VCU's early decision plan must accept the offer of admission by Jan. 1. Fall freshman applicants accepted to

the university by April 1 must notify the Office of Undergraduate Admissions of their intent to enroll or not to enroll by May 1. Fall freshman applicants, if accepted after April 1, must notify the university within four weeks.

Fall transfer applicants accepted to programs on the Academic Campus must notify the Office of Undergraduate Admissions of their intent to enroll by July 1 or four weeks after receiving their letter of admission. Fall applicants to the health sciences programs must respond within the time frame listed on their acceptance letters as determined by the individual department. **All students accepted for the spring semester must respond to the offer of admission by Jan. 1.**

A \$100 nonrefundable deposit is required of all applicants who accept VCU's offer of admission. However, the schools of Dentistry, Medicine and Pharmacy require a higher deposit. (see specific programs for amounts). The \$100 deposit is credited to the student's account with the university and is not deferrable to a future semester. Students experiencing economic hardships may request a waiver of the \$100 deposit through a letter from a school official (counselor, adviser, financial aid counselor, principal) submitted to the Office of Undergraduate Admissions. The decision to grant a waiver is based on information submitted to the university on the student's Free Application for Federal Student Aid.

Students who defer their acceptance to a later semester forfeit their initial tuition deposit and must submit a second \$100 deposit for the semester in which they choose to enroll.

### Post-admission advising

Students are encouraged to seek advising, depending on intended major, from the appropriate office listed:

#### School of the Arts

Art Foundation

Office of the Director, 812 W. Franklin St.

Room 208, (804) 828-1129

Other Advising

Contact major department

#### School of Business

Office of the Associate Dean for Undergraduate Studies

Business Building, 1015 Floyd Ave.

Room 3119, (804) 828-3710

#### Department of Clinical Laboratory Sciences

Randolph Minor Annex-Basement

301 College St., (804) 828-9469

#### School of Dentistry

Lyons Building, P.O. Box 980566

Suite 309, 520 N. 12 St., (804) 828-9196

#### Division of Dental Hygiene

Wood Memorial Building, P.O. Box 980566

Suite 318, 521 N. 11th St., (804) 828-9096

#### School of Education

Office of the Assistant Dean

Oliver Hall, 1015 W. Main St. Room 2090

(804) 828-3382 or see Humanities and Sciences

#### School of Engineering

921 W. Franklin St.,

Room 102, (804) 828-3643

#### College of Humanities and Sciences

(including humanities, sciences, social sciences, mass communications, pre-health sciences)

Office of the Associate Dean

Hibbs Building, 900 Park Ave., Room 205,

(804) 828-1673

Humanities and Sciences/Undeclared

Academic Success Center

900 Park Ave., Room 207

(804) 828-2333

Humanities and Sciences/Bachelor of Interdisciplinary Studies

310 N. Shafer St.

(804) 828-8420

#### Health and Physical Education

Department of Health and Physical Education

817 W. Franklin St., Room 221,

(804) 828-1948

#### Honors Program

Valentine House

920 W. Franklin St.

(804) 828-1803

#### School of Medicine

Doctor of Medicine Program

Student Activities, Sanger Hall,

1101 E. Marshall St.,

Room 1-002, (804) 828-9791

#### School of Nursing

Nursing Education Building

1220 E. Broad St., P.O. Box 980567

(804) 828-0724

#### Department of Occupational Therapy

VMI Building

1000 E. Marshall St., 4th Floor, Room 422

(804) 828-2219

**School of Pharmacy**

Doctor of Pharmacy Program  
Office of the Associate Dean for Admissions  
P.O. Box 980581  
Smith Building, 410 N. 12th St.  
Room 155, (804) 828-3000

**Department of Radiation Sciences**

West Hospital  
1200 E. Broad St., 6th Floor West Wing  
(804) 828-9104

**School of Social Work**

Office of the Director for the B.S.W. Program  
1001 W. Franklin St., Room 103,  
(804) 828-0703

**Undergraduate applicants not admitted to degree status but offered special status may request information or assistance in formulating alternative educational plans from the Office of Bachelor of Interdisciplinary Studies and Special Nondegree-Seeking Student Advising, 310 N. Shafer St., P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-8420.**

**Orientation**

The university provides orientation during the summer, fall and spring to all new undergraduate students. Orientation programs are designed to increase the students' awareness of the university's programs, services and facilities and to provide opportunities for faculty advising and registration for their first semester of classes.

After acceptance to the university, students are sent detailed information regarding the orientation program. Included in the summer orientation program is a program for the parents of freshman students that is especially helpful to their understanding of the university and its future relationship to their sons and daughters.

For additional information about orientation, contact the Office of First Year Student Services, Virginia Commonwealth University, P.O. Box 842032, Richmond, VA 23284-2032, (804) 828-3700. For information regarding orientation to MCV Campus programs, contact your individual department.

**Evaluation of transfer credit — four-year and two-year institution applicants**

An evaluation of transferable credits for applicants to the Academic Campus programs is made by the appropriate school or department after the accepted applicant's final transcript has been received by the Office of Undergraduate Admissions. Applicants to health science programs on the MCV Campus will receive a copy of the transfer credit evaluation with the offer of admission.

Acceptable course credits from other institutions will be recorded on the student's permanent record at VCU, together with the grades earned, if the credits are applicable toward a degree program. Accepted transfer credits are counted as hours earned toward the degree but are not used in the computation of the student's VCU GPA. Grades for transfer credits are evaluated in the computation determining graduation honors. Credits earned at other institutions carrying a grade of "D" are not accepted for transfer (see exception relating to Articulation Agreement with state two-year institutions). In addition, transfer work from two-year institutions may not be applied to upper-division requirements at VCU.

Courses taken on the "pass/fail" or "pass/no pass" systems or courses taken for grades of "satisfactory" or "unsatisfactory" that receive earned credits and a "satisfactory" grade (or comparable passing grade) from the transfer institution receive equivalent semester credit. Transfer credits graded as "pass/fail" will not be included in the computation for determination of academic honors at VCU.

Degree candidates must complete the last 25 percent of the credit semester hours required for their bachelor's degree program at this institution.

**Articulation agreement between VCU and Virginia Community Colleges (Academic Campus only)**

Students from VCCS institutions, Richard Bland College or other two-year institutions **who have not completed the college parallel A.A., A.S. or A.A.&S. degree** will have the exact designation of their status determined after an evaluation of acceptable credits. This evaluation is determined by the equivalencies shown in the VCU

Transfer Guide for Virginia Community Colleges and Richard Bland College that may be accepted, including not more than 50 percent in the major field of study. However, the applicant should realize that more than two additional years may be necessary to complete the degree requirements in certain curricula.

Credits earned in community college occupational or technical programs will be judged on their own merits to determine their applicability toward VCU degree requirements. In addition, many accredited institutions offer correspondence courses which may be considered for transfer credit.

After an accepted student's final grades have been received by the Office of Undergraduate Admissions, a transfer credit evaluation form is prepared by the student's intended VCU college or school listing the transferable courses and is sent to the student. Students accepted to programs on the MCV Campus will receive the transfer credit evaluation form with the letter of acceptance.

Accepted transfer credit contributes to hours earned and toward fulfillment of degree requirements at VCU. Although the grades of accepted transfer courses are recorded on the student's VCU transcript, hours attempted and quality points earned are not recorded. Accepted transfer credits are not included in the transfer student's overall grade-point average at VCU. **However, calculation of the GPA requirement for admittance into the School of Business advanced program considers grades earned at all institutions attended.** The GPA for fulfillment of VCU degree requirements is computed only from courses taken at VCU. The grades and quality points of transfer courses are evaluated in the computation determining graduation honors. Accepted quarter-hour credits recorded on the VCU transcript are converted to semester-hour credits.

**Credits transferred from community colleges may not be used to fulfill the VCU degree requirement of 45 semester-hour upper-level credits even though they may be substituted for the content of a VCU 300-level course.**

A student who changes his/her major after beginning classes at VCU must have another evaluation of credits completed by the school offering the new major. In this case, the department



chairperson of the new major is not obligated to accept all the courses accepted for transfer credit in the initial evaluation. This re-evaluation does not change the completion of general education requirements per the State Policy on Transfer if the student has completed the associate degree.

Conversely, a second evaluation following a change of major may result in transfer of a greater number of credits.

Attainment of the college/school or department minimum grade-point average and any other standard requirements is required of all students, including, in the case of the School of the Arts, a portfolio evaluation for visual arts applicants and an audition for performing arts applicants. Applicants to degree programs that are competitive are not guaranteed admission but will be evaluated on the same basis as currently enrolled VCU students.

### Other sources of academic credit

#### Advanced Placement Tests/College Board

Qualified students who have taken college-level work in a secondary school may receive academic credit and/or advanced placement. Examinations which determine advanced placement are the Advanced Placement Tests of the College Board. AP grades of 3, 4 or 5 will be given from three to ten semester credits per AP test depending on the subject area and the quality of the free response section of the particular AP test. Final determination of credits are made after test results and examination booklets have been received by the deans office in the College of Humanities and Sciences and have been evaluated by the university. Accepted credits are counted as credits earned toward the degree but are not used in the computation of the students VCU GPA.

The university accepts advanced placement in the following areas: American history, history of art, biology, chemistry, computer science, English language and composition, economics, European history, French language and literature, German language and literature, government and politics, Latin, mathematics calculus AB, mathematics calculus BC, music listening and literature, music theory, physics B, physics C,

psychology, and Spanish language and literature.

#### College Level Examination Program (CLEP)

CLEP is designed to allow people who have gained knowledge outside the classroom to take examinations and receive college credit for what they have learned.

##### Procedures for VCU students

1. Obtain CLEP approval forms, information about CLEP general and/or subject examinations, VCU course equivalency information, optional essay requirements, and CLEP examination applications from the Office of Community Programs, Virginia Commonwealth University, 827 W. Franklin St., Room 202, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-8420.
2. CLEP approval forms must be completed for general examinations and for each subject examination taken.
3. Discuss the examination(s) to be taken with an adviser. Obtain permission signatures from the adviser and dean of the school in which you are a major on each of the three approval forms. If the optional essay is required for a subject examination, it should be indicated on the CLEP approval forms and on the CLEP application.
4. Return the completed CLEP approval forms, the completed CLEP application, and the proper fee to the Office of Community Programs. After receipt of these materials and fees, the examination time will be scheduled.
5. The examination score and the result of the optional essay are sent to the dean's office in which the student is a major for final action. The dean then sends formal notification to the student, Records and Registration and the student's adviser.

##### Regulations for VCU students

1. CLEP credit is officially awarded only to students who are fully accepted into a VCU degree program.
2. Students may not take a subject or general examination during the semester in which they plan to graduate.

3. A student may not attempt a subject or general examination if it duplicates in part, or full, any VCU course or combination of courses which the student has already completed or enrolled in for credit. For example, a student who has completed courses in United States and European history, sociology, anthropology, and psychology, or similar courses, is not eligible to take the social sciences and history general examination. The dean's office of the school in which the student is a major makes the decision about the appropriateness of taking a particular examination.
4. If a student has earned CLEP subject examination credit, the student may not take a VCU course for credit which would duplicate the CLEP credits already earned.
5. The CLEP general examination in English composition is not acceptable for VCU credit. Students may take the CLEP Freshman College Composition subject examination for credit equivalent to English 101. There is no CLEP exam equivalent for English 200. In order to receive credit for the CLEP general examination in mathematics, the student must take the Mathematics Placement Test and test at the STAT 208, 210 or MATH 200 level. To make arrangements to take this placement test, contact the Department of Mathematics at (804) 828-1301, ext. 107. Results should be reported to the dean of the school in which the student is a major.
6. A maximum of 54 semester credits can be earned through CLEP examinations.

#### Undergraduate credit by examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the university provides its students the opportunity to accelerate their education through credit by examination. The conditions under which credit by examination may be given and the procedure for doing so are outlined on the following page.

1. With the approval of the dean, each department or program shall:
  - a. determine which, if any, courses shall be available for credit by examination. The student should check with the department offering course work in the area in which he or she wishes to take credit by examination for a list of the courses so designated,
  - b. determine the types of examinations, standards of evaluation, and evaluators for the courses so designated, and
  - c. determine the qualifications for students to be eligible to take the examinations.
2. The examinations, if available, may be taken by any enrolled student during the fall and spring semesters and during the summer session.
3. The student wishing to take credit by examination must meet the following requirements:
  - a. not have received a grade listed in this bulletin, including "AU" or "W" for the course for which credit by examination is sought. Also, the student should not have been granted transfer credit for a similar course taken elsewhere,
  - b. be a currently enrolled student as certified by the examining department, and
  - c. meet departmental and school eligibility requirements as evidenced by the written approval of the chair of the examining department.
4. After consultation with the major adviser and within the first four weeks of a semester or the first week of a summer session, the student must complete the Credit by Examination Approval Form with the department chair. The form, available from the department, should be left with the chair when it is completed.
5. Within two weeks, the student is notified by the dean's office of the time and place of examination.
6. After notification, but before taking the exam, the student must pay the university cashier the fee established by VCU for each credit being sought. As verification of payment, the student presents

the receipt to the department chair before the examination is taken.

7. After the examination is taken, the results and the examination are sent to the dean's office, which notifies the student of the results. If the student passes the examination, the course title, credits earned, and the grade "CR" are recorded on the student's permanent academic record. Credits so earned are applied toward the graduation requirement for total credits. However, these credits are not included in the computation of the student's GPA.

### **Military service and ROTC courses**

The university may grant credit for formal military service school courses offered by the various branches of the United States Armed Services. The guidelines for granting such credit include:

1. the positive recommendation of the Commission on Accreditation of Service Experiences of the American Council on Education as stated in the most recent edition of *A Guide to the Evaluation of Educational Experiences in the Armed Services*, and
2. the applicability of such credit toward the student's degree program as interpreted by the department or school in which the student seeks a degree. Credits accepted are counted as credits earned toward the degree, but are not used in the computation of the student's GPA. The student should consult with the dean of the school or college for further details about the procedures for awarding credit for military service school courses.

Army ROTC is open to any VCU student. Advanced standing may be granted to veterans, junior ROTC graduates, or members of the Reserves/National Guard after the department chair's review of academic records and verification of ROTC academic alignment. The number of credits accepted toward graduation requirements is determined by each school. See the Department of Military Science in Part VII of this bulletin.

### **Credits earned through the International Student Exchange Program (ISEP)**

Credits earned by a VCU student through ISEP appear on the student's transcript, but are not included in the computation of the student's cumulative GPA. See Center for International Programs in Part XX of this bulletin. This policy became effective July 1990.

### **Credits earned through the National Student Exchange (NSE)**

Credits and grades attempted by a VCU student through NSE appear on the student's transcript, and are included in the computation of the student's cumulative GPA. This policy became effective March 1995. For additional information, see the Center for International Programs in Part XX of this bulletin.

### **Senior Citizens Higher Education Program**

The Senior Citizens Higher Education Act of 1974 provides that any legal resident of the state who before the beginning of any semester ... in which he or she claims benefits of the act, and who has had legal domicile in the state for one year may, without paying tuition, register for and enroll in courses under the conditions outlined in the act as amended in 1982 and 1986.

The tuition-free policy shall apply except that the senior citizen shall be subject to fees established for the purpose of paying for course materials, such as laboratory fees, individualized music instructions, etc.

Senior citizens not enrolled for academic credit may not register for more than three courses in any one semester but may register each semester. The Senior Citizens Act benefits shall be available to persons 60 years of age or older with the following legally mandated provisions:

1. The senior citizen shall be subject to admission requirements of the institution.
2. The institution shall determine whether or not it has the ability to offer the course or courses.
3. If the senior citizen has a federal taxable income of not more than \$10,000 for Virginia income tax purposes during the preceding year, the individual may take a

course for academic credit at no charge. If the person's taxable income exceeded \$10,000, the individual may only audit the course at no charge. A senior citizen, regardless of income level, may take a noncredit course at no charge.

4. The senior citizen shall be admitted to a course after all tuition-paying students have been accommodated. Senior citizens wishing to avail themselves of the opportunity to study at VCU should call (804) 828-1222 or the Office of Community Programs, (804) 828-1831.

### **Enrichment and acceleration opportunities**

Special honors programs and courses are offered at the university. Refer to the appropriate school sections of this bulletin for further information. Interdisciplinary honors courses designed for superior freshmen in any program also are available.

### **Early Admission Program**

The Early Admission Program permits exceptional students the opportunity to enroll in undergraduate pro-

grams at the university as freshmen after the completion of the junior year of high school. The program is available to students who demonstrate readiness for college by their high school record, SAT results, and in an interview with an admissions counselor. Applicants for the Early Admission Program must present a minimum GPA of 3.2 and minimum combined SAT scores of 1180 or demonstrate exceptional talent in their intended area of study.

Additionally, early admission applicants must be within two of the required units for graduation and have the written approval of the high school principal (or designee) to seek admission to college as full-time undergraduate students. Candidates interested in this program should write the Office of Undergraduate Admissions for further information.

### **Advanced Scholars Program**

Qualified high school students from Richmond and surrounding area high schools may be permitted to carry college-level courses at the university while concurrently completing the high school diploma. Students may select courses of interest and upon successful completion of the courses may receive

college credit. However, courses selected should not be available in the high school curriculum.

Candidates must be nominated and approved by the secondary school principal. A maximum of 100 candidates are accepted each semester, and candidates may enroll in no more than two courses per semester.

As a guide to secondary schools, the following criteria for selection are considered.

1. Each candidate must be nominated and approved by the secondary school principal.
2. Each candidate must have achieved a total of 1180 points on the College Entrance Examination Board SAT and must have maintained a "B" average.
3. Each candidate must be a high school junior or senior.
4. The desired courses to be studied must be available and appropriate.
5. All parties should emphasize that tuition is charged for courses taken as an Advanced Scholar.

Notification forms and other information may be obtained from the Office of Undergraduate Admissions, Virginia Commonwealth University, P.O. Box 842526, Richmond, VA 23284-2526, (804) 828-1222.



# *Expenses and Financial Aid*



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**As a state-supported institution of higher education, VCU recognizes the importance of financial assistance in making dreams a reality. Many federal and state funds are available to qualifying applicants, as well as merit and need-based scholarships.**



**Financial Aid Office**

Division of University Outreach  
 901 W. Franklin St. • P.O. Box 843026  
 Richmond, VA 23284-3026  
 (804) 828-6669 • Fax (804) 828-6187  
 E-mail: [faidmail@vcu.edu](mailto:faidmail@vcu.edu)  
[www.vcu.edu/enroll/faid](http://www.vcu.edu/enroll/faid)

**Student Accounting Department**

Division of University Outreach  
 827 W. Franklin St. • P.O. Box 843036  
 Richmond VA 23284-3036  
 (804) 828-2228  
[www.vcu.edu/enroll/sa](http://www.vcu.edu/enroll/sa)

**Fees and expenses**

Students must pay all applicable fees when due, as described in this section. Students who fail to pay these fees on time may be charged a late payment fee. The university reserves the right to revise or alter all fees, regulations pertaining to student fees, and fee collection procedures at any time. In addition to expenses billed by the university, students should make allowances for books, clothing, supplies, travel and other out-of-pocket costs when figuring their total yearly expenses at the university.

Every student is responsible for keeping a current mailing address on file with the Office of Records and Registration.

**Tuition and fee schedule**

Tuition and fees categorized and described in this section are on the Student Accounting Web site and also appear in the Virginia Commonwealth University's Schedule of Tuition, Fees, and Other Expenses — a publication available each June after the Board of Visitors has set tuition and fee amounts. This publication is available at the Student Service Centers on both campuses and at the Undergraduate Admissions reception desk at 821 W. Franklin St. Students also can obtain a copy by writing or phoning the Office of Undergraduate Admissions or the Student Accounting Department.  
 — — — [www.vcu.edu/enroll/sa](http://www.vcu.edu/enroll/sa)

**Tuition determination and student classification**

Tuition is based on the number of credit hours a student is taking and by the student's residency classification.

For in-state tuition benefits, the student must comply with Section 23-7.4 of the Code of Virginia. See "Appendix C" of this bulletin.

All applicants to VCU who want in-state tuition rates as Virginia residents must fill out the Application for Virginia In-State Tuition Rates. The residency determination of the applicant is conveyed at the time of admission.

New students initially classified as non-Virginians for tuition purposes may request a review of the initial residency determination by contacting the residency officer in the Office of Records and Registration. This office may request that the applicant complete a Student Supplemental Application for Virginia In-State Tuition Rates and submit documents for additional clarification. Continuing students desiring a change of residency status must submit a completed Student Supplemental Application for In-State Tuition Rates with supporting documentation. Requests and applications for a second review should be submitted to the Residency Officer no later than 30 days prior to the beginning of any semester.

Students approved for a change to in-state status for tuition purposes are notified by mail with copies of their approval letters sent to the Financial Aid Office and the Student Accounting Department. Students denied this status also are notified by mail. The denial letter informs the student of procedures for appeal of this decision.

**Tuition and fee charges**

Students accepted into an undergraduate degree program who accept the offer of admission must pay a \$100 nonrefundable tuition deposit (amount of deposit may vary according to program). This deposit is credited toward the tuition charge for the first semester. If the student accepts the offer, pays the fee, then decides not to enroll for the intended semester, the deposit is forfeited.

Students are classified as full time or part time based on the total number of credit hours enrolled in each semester. For tuition charges, there is no distinction between day and evening students. A student must be enrolled in at least 12 credits each semester to achieve full-time undergraduate status. An undergraduate year includes two semesters.

Full-time undergraduate students are charged a flat tuition fee per semester. An undergraduate student enrolled for more than 18 credits any semester will be charged a course overload fee on a per credit hour basis above the full-time tuition rate. The overload fee will not apply to students in first professional programs or other programs that specifically require the student to enroll in courses that will exceed the applicable maximum number of credit hours. Part-time undergraduate students, those enrolled in less than 12 credits, are charged tuition on a per-credit basis. Students classified as Virginia residents pay lower tuition and fees than out-of-state students.

In addition to tuition, students must pay the mandatory fees described in this section.

**University fee**

This fee is used by the university to support student facilities, campus development, intercollegiate athletics and other programs. Full-time students pay a flat-rate university fee each semester. Part-time students pay this fee on a per-credit basis.

**Student activity fee**

This fee is used to support social, cultural and other student activities on the Academic Campus. These activities include concerts, plays, student organizations and publications.

This fee is determined and assessed by the student governing body on the Academic Campus. Full-time students on the Academic Campus pay a flat-rate student activity fee, while part-time students on the same campus pay this fee on a per-credit basis. Students on the MCV Campus are not charged this fee.

**Student Government Association fee**

This fee is used to support social, cultural and other student activities on the MCV Campus. It is determined and assessed by the Student Government Association on the MCV Campus. Academic Campus students are not charged this fee.

**Student health fee**

All full-time students on both campuses must pay the student health fee.

Part-time students may participate in the University Student Health Services on an elective basis by paying the student health fee. The University Student Health Services offers unlimited office visits for acute and chronic ailments, after-hours emergency room referrals and laboratory tests, among other services.

### Technology fee

The technology fee is charged to all undergraduate, graduate and professional students in all programs. Full-time students pay a flat rate. Part-time students pay a per-credit-hour rate. The fee is used to fund improved access and assistance with information technology.

### Off-campus fees

The university fee, the student activity fee, the student government association fee (except School of Social Work) and the student health fee are not charged to students taking off-campus classes.

### Special fee charges

Because of specialized programs, various schools and departments may charge each student additional fees to cover special materials, equipment breakage and other costs. For specific information about special fees, refer to the Student Accounting Web site or the VCU Schedule of Tuition, Fees and Other Expenses, or to the specific school or department section in this bulletin.

### Room and board fees

With a letter of acceptance, the student also receives a room reservation card. If residence hall space is required, the student fills out the card and returns it with a \$250 room rental prepayment. The student is notified of his or her contract for placement in a residence hall or of being placed on a waiting list for residence hall space. The \$250 room rent prepayment is credited toward the total amount due for room rent. This prepayment is refundable only if the contract is canceled in writing before June 30 for the fall semester or before Dec. 15 for new students entering in the spring semester. After these dates, housing contract prepayments are not refundable. Please

address correspondence about housing contracts to University Housing Office, P.O. Box 842517, 711 W. Main St., Room 103, Richmond, VA 23284-2517.

### Room rent

Room rent is payable at the time tuition and other fees are due. Contracts for residence hall space are for the entire academic year, except in cases involving contracts initiated during the spring semester or summer session or for students who will graduate at the end of the fall semester. Students are not released from their contracts between semesters. Only one semester's room rent is due prior to each semester.

Students may refer to the Student Accounting Web site or the VCU Schedule of Tuition, Fees and Other Expenses for exact room and board charges. In addition, students are responsible for damages to student rooms, furnishings, and common living areas.

### University board plan

Please address all Dining Services concerns and questions to University Dining Services, 1111 W. Broad St., Room 128, P.O. Box 980247, Richmond, VA 23298-0247; telephone (804) 828-1148, e-mail [dining@vcu.edu](mailto:dining@vcu.edu) or visit the Dining Services Web site. — — — [www.bsv.vcu.edu/vcufood](http://www.bsv.vcu.edu/vcufood).

All resident students (with the exception of students living in Gladding Residence Center apartments, Pharm.D. students and graduate students) are required to purchase a board plan. Students may choose from a 10-, 15- or 19-meal plan. All board plan meals are served in the Hibbs Dining Center, 900 Park Ave. on the Academic Campus or the Larrick Dining Center, 641 N. Eighth St. on the MCV Campus.

Non-dorm Students. Students living off campus, commuting or taking evening classes are encouraged to purchase either a 25-, 50- or 100-meal package or any of the board plans mentioned above and receive the same benefits of those students living on campus.

### Other Dining Services facilities

The University Student Commons features McDonald's and the Commons Cafe, offering snacks and meals throughout the day. In the Hibbs Dining Center on the Academic

Campus, students will find EASY GOES Snack Shop and on the MCV Campus, the L Express in the Larrick Dining Center. All locations accept cash and VCUCard debit accounts.

### Student billing

The Student Accounting Department issues bills to students showing charges for the following fees: tuition, student activities fee, student government association fee, technology fee, university fee, private music lessons, school major fees, special course fees, course materials fees, dental kits, disability insurance, room rent, board fees, telecommunication fees, student health fee and study abroad fees.

Tuition and fees for preregistered students, along with charges for room and board where applicable, are due approximately one week before the beginning of each semester. All other students will be billed after the registration period and should pay upon receipt of the invoice.

### Drop vs. withdraw

**Drop** — charges are removed to indicate that the student never attended the class. The student is not eligible to receive financial aid, and any financial aid already credited to the student's account based on the original course registration will be removed from the student's account and may create a balance due to the university.

**Withdraw** — results in the academic grade of "W." Charges are assessed and adjusted according to the University Refund Policy. Students may owe a balance to the university.

### Refund Policy, University

The official university tuition and fees refund policy applicable only for the fall and spring semesters (excluding short courses) is outlined in the table on the following page. Refunds are calculated on a course-by-course basis, disregarding the full-time cap amounts. Students who are enrolled in the maximum number of credit hours and withdraw to part-time enrollment and students who are in an overload status and withdraw to the full-time credit hour maximum may not receive a refund.

Withdrawal/ drop period	Student refund	Retained by university
Drop prior to the first day of classes	100% tuition and fees	0%
Drop/withdraw first week of class	100% tuition and fees	0%
Withdraw second week of class	80% tuition and university fee	20% tuition and university fee 100% of all other fees
Withdraw third week of class	60% tuition and university fee	40% tuition and university fee 100% of all other fees
Withdraw fourth week of class	40% tuition and university fee	60% tuition and university fee 100% of all other fees
Withdraw after fourth week of class	0%	100% all fees

This table pertains to both complete withdrawals and reduced course loads for fall and spring semesters only.

Students in off-campus classes are subject to the same refund policy as all other university students if the class is scheduled on the regular semester schedule. If the off-campus class is shorter or longer than the academic semester, the refund dates are adjusted accordingly at the request of the Off-campus Programs Office in the Division of University Outreach.

The refund policy and deadlines of the English Language Program are different from the university's refund policy for academic classes. Details of the policy may be obtained from the English Language Program Office in the Division of University Outreach.

A full refund for holiday intersession will be granted if the course is dropped on the day of the first class meeting. Partial refunds are not granted.

A full refund for summer tuition and applicable fees will be granted if the course is dropped no later than the day following the first day of a given class. (This deadline also is applicable if the class does not meet on two consecutive days.) Students reducing their academic course load to fewer than full time (12 credits for undergraduates and nine credits for graduates) before the end of the last day to drop a course will be entitled to a refund of tuition and applicable fees reflecting the reduced

course load. Partial refunds are not granted for the summer semester. This same refund policy also applies to short courses offered during the fall and spring semesters.

Students who are financial aid recipients and withdraw from all courses prior to completing 60 percent of the semester are subject to the Federal Return of Title IV Funds Policy. For more details see Federal Financial Aid Refund Policy.

Refunds will be computed based on the actual withdrawal date certified by the Office of Records and Registration in the Division of University Outreach. Refunds will not be made to students who do not attend classes and have not completed the required withdrawal procedure. Refund processing may take up to 30 days. Exceptions to this refund policy are made only in rare instances. Written application for an exception must be filed with the Student Accounting Department and the university's Refund Waiver Appeals Committee.

Students will not be entitled to a refund of room fees:

- if they are suspended from the residence halls for disciplinary reasons,
- if they voluntarily withdraw from the university residence halls but remain registered for any course(s) at the university unless clearance is granted through the Office of the Dean of Student Affairs, or
- unless they have completed the withdrawal procedures through the Housing Office.

A refund of the board plan charges will be made if:

- the cancellation occurs prior to the first official board plan day of the year provided the Dining Services coordinator has been given written notification. A full refund of the board plan charges will be made at this time.
- the cancellation occurs throughout the semester; refunds will be granted on a daily proration.

Refer to the Room and Board Contract Terms and Conditions for additional information.

Requests for refunds of overpayment may be made in writing to VCU Student Accounting Department, P.O. Box 843036, Richmond, VA 23284-3036. Refund request forms are available at

the Student Services Centers, 827 W. Franklin St., Room 104 or 1101 E. Marshall St., Room 1-055. In accordance with credit card regulations, the university will refund the credit card account with any credit balance that may result on a student's account as the outcome of a credit card payment. The remaining credit balance, if any, will be refunded to the student.

### Defense crisis tuition relief, refund and reinstatement guidelines

These guidelines apply to any operation, including a defense crisis, in which the president of the United States declares a sudden mobilization that includes members of the Virginia National Guard or the active or reserve forces of the U.S. Armed Forces who are students enrolled at VCU. Students are offered the following enrollment secession options:

1. Drop all courses before the end of the add/drop period and receive a full refund of all funds paid the university. Students will be asked to sign the drop request form with the registrar indicating that they are not receiving a financial aid refund.

This option might best meet the needs of students who are called to active duty service during the first week of school and did not receive a financial aid refund check or direct deposit.

2. Receive a grade of Incomplete (IM – incomplete military) in one or all courses. Students residing in university housing will be released from their housing and meal contracts, and will receive a prorated refund of these charges. Students who chose to take a grade of IM will not have tuition and fees reduced for these courses because credits will still be earned for the semester. Students will have 12 months from the date that they leave the university to complete the course work and earn a course grade.

This option might best meet the needs of students who have essentially completed all course work in a class for the semester, but have yet to turn in a final project, an exam or other materials. It should be agreed upon



between the instructor and the student that the remaining course work can reasonably be completed during the upcoming 12-month period.

3. Accept administrative withdrawal (WM – withdrawal military) from one or all courses as of the effective date of the orders to active duty. If this option is elected, a full refund of all tuition, fees and prorated room/board charges will be made for the courses that the WM is elected. If a student received financial aid, the amount recovered to the financial aid accounts will follow Title IV guidelines not to exceed university charges.

This option might best meet the needs of students who are called to national service in the middle of a semester and have not completed 90 percent of their class requirements. This option also might best meet the needs of students who are leaving the university during the first week of class and received a financial aid refund check or direct deposit as a result of their financial aid.

Leaving the university. To initiate this process, the student must provide the university registrar with a copy of his/her active duty orders in addition to a printed copy of his/her course registration for that semester and indicate Option 1, 2 or 3 for each course. The university registrar will take the appropriate enrollment action, post the appropriate grades and send a copy of the orders and a copy of the student course request statement to the director of financial aid and the manager of student accounting.

Returning to the university. If the student returns within one year of completing their national emergency service requirement, the student may return to the university in the same program of studies without re-applying for admission. The student should begin the re-enrollment process by writing to the director of admissions regarding their intent to re-enroll.

### Statement of Student Financial Responsibility

A student who fails to meet payments when due may be assessed a late payment fee and is denied registration

for future classes until he or she has paid all amounts owed to the university.

Student accounts with balances owed the university are referred to the Collection Unit. Pursuant to Section 2.1-732 et. seq., of the Code of Virginia, and in accordance with rules and regulations promulgated by the state comptroller and attorney general of the commonwealth of Virginia, VCU will charge interest, costs and fees on all accounts past due. Students with balances owed the university are not issued degrees, transcripts, grades or grade reports, until all charges are paid in full.

Students are reminded that they are ultimately responsible for any unpaid balance on their account as a result of the Financial Aid Office or their sponsor canceling or reducing the award. Also see Federal Financial Aid Refund Policy.

Any communication disputing an amount owed, including an instrument tendered as full satisfaction of a debt, must be submitted to the Director of Student Accounting, Student Accounting Department, P.O. Box 843036, Richmond, VA 23284.

VCU participates in the Virginia Set-Off Debt Collection Act of 1981. Under the provisions of this act, a Virginia individual income tax refund is subject to the university's claim for unpaid balances of tuition and fees.

### Dishonored checks

A charge of \$20 will be levied for all dishonored checks.

### Loan repayment

Before graduation or withdrawal from the university, students may be required to attend a loan counseling exit session. Please refer to Part VI of this bulletin.

### Accident insurance

VCU is not responsible for accidents occurring to students in connection with class, laboratory, shop, fieldwork, athletics, student activities, travel or other activities. However, the university offers its students approved insurance, providing substantial benefits at group rates. The insurance extends for a 12-month period beginning Aug. 20, or from the beginning of the second semester to the next Aug. 20, and

includes coverage for accidents, hospital, medical, surgical and other benefits for illnesses. Married students may wish to enroll their spouses and children. The university recommends, but does not require, that all students enroll in the approved student group insurance. For further information, contact University Student Health Services.

### Student accounting

The Student Accounting Department, under the Division of University Outreach, 827 W. Franklin St., P.O. Box 843036, Richmond VA 23284-3036, (804) 828-2228, is responsible for the assessment and billing of tuition, room, board, and other fees. The department also bills third-party payers for VCU charges and issues tuition and fee refunds to eligible students based on policies stated in this section. Visit the Student Accounting Web site.

— — — [www.vcu.edu/enroll/sa](http://www.vcu.edu/enroll/sa)

### Financial aid

VCU uses all available funds to help students gain access to a college education. Eligibility for financial aid varies depending on a student's academic and financial circumstances. In most cases, each student will qualify for some form of financial assistance. Current information on financial aid programs, policies, procedures and links to free scholarship search services are available on the VCU Web site.

— — — [www.vcu.edu/enroll/finaid](http://www.vcu.edu/enroll/finaid)

To receive printed information, submit a written request to one of the four financial aid counseling centers listed below.

#### Academic Campus

Ginter House, Shafer Street Entrance  
901 W. Franklin St., P.O. Box 843026  
Richmond, VA 23284-3026  
Phone: (804) 828-6669  
Fax: (804) 828-6187  
E-mail: [faidmail@vcu.edu](mailto:faidmail@vcu.edu)

#### Schools of Allied Health Professions, Nursing and Pharmacy

Sanger Hall, Room 1-055  
1101 E. Marshall St., P.O. Box 980244  
Richmond, VA 23298-0244  
Phone: (804) 828-9800  
Fax: (804) 828-2703  
E-mail: [faidmail@vcu.edu](mailto:faidmail@vcu.edu)

**School of Dentistry**

Lyons Building, Room 309  
 520 N. 12th St., P.O. Box 980566  
 Richmond, VA 23298-0566  
 Phone: (804) 828-9196  
 Fax: (804) 828-5288  
 E-mail: hmdugger@vcu.edu

**School of Medicine**

Sanger Hall, Room 1-008  
 1101 E. Marshall St., P.O. Box 980565  
 Richmond, VA 23298-0565  
 Phone: (804) 828-4006  
 Fax: (804) 827-5555  
 E-mail: djackson@som1.som.vcu.edu

**Eligibility for financial aid**

Most students are eligible for some type of financial aid regardless of family financial circumstances. However, to be eligible for aid, a student must:

- be a U.S. citizen or an eligible noncitizen,
- be admitted to or enrolled in an eligible degree or certificate program,
- be making reasonable academic progress,
- not owe a refund on a federal student grant or be in default on a federal student loan, and
- be enrolled at least half time (six or more credit hours at the undergraduate level, or five or more at the graduate level).

**Applying for financial aid**

To apply for financial aid at VCU, submit a Free Application for Federal Student Aid (FAFSA) designating VCU (school code 003735) to receive the results of your application. In order to reduce problems, errors and omissions on the FAFSA, students are strongly encouraged to apply electronically using FAFSA on the Web; however, applicants may apply using the paper FAFSA application, available through VCU, high schools, colleges and most public libraries. The FAFSA must be completed each year.

— — — [www.fafsa.ed.gov](http://www.fafsa.ed.gov)

For students who file the FAFSA electronically and who are required to submit a signature page, please remember to sign and mail the signature page that corresponds to the type of FAFSA submitted. For example, the FAFSA on the Web signature page should be submitted when the FAFSA on the Web application is filed, or the Renewal FAFSA signature

page should be submitted when the Renewal FAFSA is filed.

New VCU students are encouraged to submit their FAFSA and have the results sent to the VCU Financial Aid Office no later than April 1 so that a financial aid award letter can be sent prior to the May 1 admissions confirmation date. Continuing students should submit their FAFSA and have the results to the VCU Financial Aid Office no later than June 1.

Summarized below are the dates by which students should take action in order to meet the priority filing dates.

If the student is ...	a new VCU student:		a continuing VCU student:	
	Filing electronically using FAFSA on the Web		Completing a paper FAFSA and mailing it to the processor	
	March 6, 2000	May 1, 2000	Feb. 21, 2000	April 15, 2000

Students should complete the FAFSA using data from their completed tax returns. If necessary, they may use estimated tax return data to order to meet the VCU priority filing date but should be prepared to submit a completed tax return and W2 forms to VCU at a later date. Students will receive their award letter after their application data has been verified.

**Applying after the VCU priority filing deadline**

Students can and should apply for financial aid even if they miss the VCU priority filing date because they may still qualify for the Federal Pell Grant, Federal Direct Student Loans and the Federal Direct Parent Loans for Undergraduate Students. The priority filing date is used to give preference to early applicants for limited fund programs such as Virginia state grants, Federal SEOG grants, Federal Perkins Loans, and Federal Work-study Program awards. Completed applications received after June 1 will be processed in the order they are received. If a student has not applied for financial aid in a timely manner, they may wish to contact Student Accounting to request the VCU Installment Payment Plan which budgets each semester's bill over four payments.

**Summer studies**

Financial aid may be available for summer 2001 semester if the student applied and was eligible for aid during the 2000-01 academic year and has remaining Pell Grant or loan eligibility. Information about the summer aid application form, deadline and processing schedule is published in the Summer Schedule of Classes (available March 2001).

**Study abroad**

All study abroad programs must be coordinated through the VCU Center for International Programs at (804) 828-8471. Students should work with a financial aid counselor to coordinate aid for their study abroad program.

**Quality assurance**

To ensure that information provided on the Free Application for Federal Student Aid is accurate, a student's application may be selected for review at any time during an enrollment period, and the student will be requested to provide documentation that supports the information. By signing the FAFSA, a student (and parent or spouse, if applicable) agrees to furnish such documentation. If the documentation is not provided when requested, financial aid awards will be canceled and any funds already disbursed may need to be repaid.

**University bill**

Bills for tuition, fees and other university charges are mailed by the Student Accounting Department to the student's permanent address. When financial aid awards are not enough to pay the university charges, the remaining balance must be paid from personal funds. The student may choose to participate in the VCU Installment Payment Plan. Federal work-study awards will not be deducted from the university charges because those funds are paid directly to the student, based on hours worked.

**Financial aid appeals**

Financial aid eligibility decisions are made using the uniform application of federal, state and institutional regulations and policies. Students have the right to appeal their financial aid award offer. The following documented

unusual circumstances may be reasons for an appeal:

- loss or reduction of employment earnings,
- disability or death of parent or spouse,
- separation or divorce,
- loss or reduction of untaxed income,
- losses due to natural disaster,
- unusually high educational program costs,
- unusual medical expenses, or
- dependent and child care expenses.

### Reasonable Academic Progress

The Financial Aid Office will review all students who have applied for financial aid to be sure that they are making Reasonable Academic Progress (RAP) toward their degree/certificate. The RAP review will be conducted at least once annually (typically at the end of the spring semester, or whenever the student submits their completed FAFSA application for financial aid). RAP is a combination of qualitative and quantitative components and is measured by:

1. **Grade point average.**

Undergraduate students must maintain at least a 2.0 GPA and graduate students a 3.0 GPA as specified by their department. Undergraduate freshman students are given a grace period where they must earn at least a 1.00 GPA by the end of their first academic year as measured after spring grades have been posted.

2. **Completion rate.** The completion rate is measured by the number of credit hours earned divided by the number of credit hours attempted. All students who need financial aid funding must successfully complete at least 67 percent of all credit hours attempted (attempted hours include incompletes, withdrawals, repetitions, progress grades, continuance grades, and noncredit remedial courses).

3. **Overall progress toward degree/ certificate.** Overall progress is measured by the number of credit hours attempted divided by the number of credit hours necessary to complete the degree or certification program. Students who need financial aid

funding may attempt no more than 150 percent of the hours required to complete their degree or certificate program.

Students will be alerted with warning letters, whenever possible, to provide them with notice that their financial aid may be in danger of being suspended. When students fail to meet RAP requirements, they will receive suspension letters indicating that they are ineligible to receive further financial aid. Students whose eligibility for financial aid has been suspended may submit an appeal if mitigating circumstances prevented the student from maintaining RAP.

### Federal Financial Aid Refund Policy

New for fall 2000, students who receive Federal Title IV grant or loan assistance and withdraw from VCU before completing 60 percent of the semester (as measured in calendar days) must have their eligibility recalculated based on the Federal Return of Title IV Funds formula. This federal formula specifies that a student's financial aid eligibility must be recalculated based on the aid the student has "earned" (based on the number of days that the student was enrolled or attending VCU prior to withdrawal). Any unearned aid (for the period of enrollment that the student did not complete from the date of withdrawal to the end of the semester) must be returned to the appropriate Title IV programs from which the student was awarded.

For VCU students who withdraw prior to completing 60 percent of the semester, they will have to return or repay all or a portion of the aid funds that had been disbursed to their VCU account. As a result, students who withdraw prior to completing 60 percent of the semester may be responsible for all or a portion of their tuition/fee bill that was previously paid by financial aid sources.

### Loans, grants and work-study

There are three basic types of financial aid: loans, grants and work-study. Each type has different features and advantages.

1. **Loans.** In terms of total dollars available, long-term loan programs

provide the most dollars. A loan is money borrowed which must be repaid at a later time. In most cases, the student is the borrower and repays the loan once he or she is no longer pursuing a degree or certification at least at half-time enrollment level. There are a few loan programs where the parent is the borrower and begins repaying the loan while the student is still enrolled. All educational loans carry competitive interest rates and terms. Some include interest benefits, meaning the federal government pays the interest on the loan while the student is enrolled. Student loan repayment generally begins after the student is no longer enrolled half time. Multiple repayment plans provide the borrower with flexible repayment options. Selected loan programs include:

- Federal Direct Student Loan (subsidized and unsubsidized)
- Federal Perkins Loan
- Health Professions Student Loan
- Loan for Disadvantaged Students
- Nursing Student Loan
- Primary Care Loan
- Federal Direct Parent Loan for Undergraduate Students

2. **Grants.** Grants are awarded without any expectation of repayment. The total dollar amount of available aid in the form of grants is less than that of total dollar amount of loans. Most grants are reserved for students with the greatest financial need. Scholarships based on merit are considered a member of this grant category. Selected grant programs include:

Undergraduate programs

- Federal Pell Grant
- Commonwealth Award
- Virginia Guaranteed Assistance
- Federal Supplemental Educational Opportunity Grant
- College Scholarship Assistance
- Virginia Transfer Grant
- VCU Scholarships
- Honors Scholarships
- Departmental Scholarships

Health profession programs

- Scholarships for Disadvantaged Students
- Exceptional Financial Need Scholarship
- Financial Assistance for Health Profession Students
- State Dental Practice Scholarships
- Virginia Medical Scholarships
- General Assembly Nursing Scholarships
- Departmental Scholarships

3. **Work-study.** Work-study is a form of financial aid that pays wages for work performed through employment. Work study positions are located on-campus and in approved locations off-campus.

### Graduate assistantships and fellowships

University graduate teaching and research assistantships and fellowships are awarded to continuing and newly-admitted graduate students. Eligibility is based on a variety of criteria. Students interested in these awards should inquire directly to the school or department of enrollment. Students in the process of applying for admission should indicate their interest in such support. Some programs include a separate application for support with the application for admission.

Special rules, contained in the VCU School of Graduate Studies Policies and Procedures Statement on Graduate Fellowships and Assistantships, apply to graduate assistants. A copy of this publication is included with the graduate dean's official assistantship/fellowship award letter. Such awards must be coordinated with any other financial aid. Any stipend support is reported to the Internal Revenue Service and is subject to IRS rules.

### Veteran and reservist educational benefits

For information on Veteran and Reservist Educational Assistance eligibility, contact:

Veterans' Affairs Office  
Financial Aid Department  
901 W. Franklin St., Room 109  
Richmond, VA 23284-3026  
(804) 828-6166; Fax: (804) 828-6187  
e-mail: faidmail@vcu.edu

Eligible veterans must comply with the following requirements to receive educational benefits as students:

1. The veteran must apply or be accepted into a degree- or certificate-seeking program.
2. The veteran must request certification after registering for courses each semester and each summer session from the Veterans' Affairs Office.
3. The veteran is eligible to use benefits for only those courses taken towards a degree or certificate program.
4. The veteran is not eligible to use benefits for courses taken on an audit basis. If repeating a course or taking a course with no credits, you must notify the Veterans' Affairs Office.
5. The veteran is responsible for ensuring that transcripts are evaluated for transfer credits to be accepted by VCU. Students must submit this information to the Veterans' Affairs Office for transmittal to the Veteran's Administration Regional Office.
6. The veteran must notify the Veterans' Affairs Office if he or she drops or withdraws from classes, or stops attending VCU.

### Virginia War Orphans Education Program

The Virginia War Orphans Education Program provides educational assistance for children of certain veterans or service personnel. Applications are available at the VCU Veterans' Affairs Office. Students should begin the application process at least four months before beginning studies at VCU.

Eligibility for this assistance is contingent upon the following:

1. the applicant must be no less than 16 and no more than 25 years old,
2. one of the applicant's parents must have served in the U.S. Armed Forces and must be permanently or totally disabled due to war or other armed conflict, or
3. one of the applicant's parents died as a result of war or other armed conflict, or
4. one of the applicant's parents is listed as a prisoner of war or missing in action, or
5. the applicant's parent, on which eligibility is based, has been a resident of Virginia at the time of entry into active military duty, or
6. the applicant's parent, on which eligibility is based, has been a resident of Virginia for at least ten consecutive years immediately before date of application, or
7. the surviving parent has been a resident of Virginia for at least ten years prior to marrying the deceased parent, or must have been a resident of Virginia for at least 10 consecutive years immediately prior to the date on which the application was submitted by or on behalf of such child for admission to any educational or training institution in Virginia.

Those eligible for the Virginia War Orphans Education Program are entitled to a tuition-free education at state-supported educational or training institutions on an annual basis. (Summer school also may be included in the annual certification of students.) Eligible students can use this benefit to pursue any vocational, technical, undergraduate or graduate program of instruction. Generally, programs listed in the academic catalogues of state-supported institutions are acceptable provided they have a clearly defined educational objective, i.e., certificate, diploma or degree.

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**VCU's Division of Student Affairs provides resources and services for the essential elements of the successful student's life.**



**VCU emphasizes the importance of balance — social as well as intellectual life, opportunities at the university for recreation, career and leadership development, personal growth, and lifestyle decision making.**



**901 Floyd Ave. • P.O. Box 843017**  
**Richmond, VA 23284-3017**  
**(804) 828-1244 • Fax (804) 828-2180**  
**www.students.vcu.edu**  
**www.students.vcu.edu/dsa**

**Dr. Henry G. Rhone**

Vice Provost for Student Affairs (1989)  
 B.A. 1968 Amherst College  
 M.Ed. 1973 Virginia Commonwealth University  
 Ph.D. 1977 University of Virginia

**Dr. William H. Duvall**

Associate Vice Provost and  
 Dean of Student Affairs (1972)  
 B.A. 1961 University of Maryland  
 M.Ed. 1964 University of Maryland  
 Ed.D. 1967 Indiana University

**Dr. Robert L. Clifton**

Dean of Student Affairs, MCV Campus (1981)  
 A.B. 1963 University of Michigan  
 M.A. 1969 East Michigan University  
 Ed.D. 1977 Wayne State University

The university offers students a wide variety of services, facilities and resources, many of which are the administrative responsibility of the Division of Student Affairs.

### Office of the Vice Provost for Student Affairs

**Dr. Henry G. Rhone**

Vice Provost for Student Affairs (1989)  
 B.A. 1968 Amherst College  
 M.Ed. 1973 Virginia Commonwealth University  
 Ph.D. 1977 University of Virginia

**Carmen Bell**

Administrative Assistant (1970)  
 B.G.S. 1986 and M.Ed. 1999 Virginia Commonwealth University

**Rachel R. Maddux**

Fiscal Administrator (1989)  
 B.S. 1983 and M.Ed. 1999 Virginia Commonwealth University

**Jean M. Yerian**

Associate Dean of Student Affairs (1979)  
 A.B. 1969 Duke University  
 Higher Diploma 1970 Trinity College, Dublin  
 M.A. 1971 Ohio State University

The Office of the Vice Provost for Student Affairs is located in the Sitterding House at 901 Floyd Ave., P.O.

Box 843017, Richmond, VA 23284-3017. The telephone number is (804) 828-1244.

The mission of the Division of Student Affairs is to help VCU students learn and develop from their educational experiences, to improve the quality of student life through attention to the varied aspects of the campus environment, to provide quality services that are responsive to student needs, and to effectively communicate and collaborate with students, faculty, alumni, families, and other publics.

Campus life departments of the division are the Office of the Dean of Student Affairs; the Office of the Dean of Student Affairs, MCV Campus; Larrick Student Center; University Student Commons and Activities; the Career Center; University Counseling Services; University Student Health Services; Recreational Sports; and University Housing and Residence Education.

Special programs in support of students' academic success are First Year Student Services, the Academic Success Center, Services for Students with Disabilities (Academic Campus), and the Office of Multicultural Student Affairs.

In addition, the division provides administrative support for key policies of the university, including the VCU Honor System and the Rules and Procedures.

### Office of the Associate Vice Provost and Dean of Student Affairs

**Dr. William H. Duvall**

Associate Vice Provost and Dean of Student Affairs (1972)  
 B.A. 1961, M.Ed. 1964 University of Maryland  
 Ed.D. 1967 Indiana University

**Norma A. Pierce**

Communications Coordinator (1989)  
 B.S. 1966 University of Tulsa  
 M.S. 1993 Virginia Commonwealth University

**Deborah M. Mulcahy**

Public Relations Assistant Specialist (1998)  
 B.S. 1988 Radford University

The Office of the Associate Vice Provost and Dean of Student Affairs serves as a resource for students, parents of students, faculty, and staff who have problems or concerns with their interaction with one another or

with the university. The dean's office assists in resolving issues or refers inquirers to the appropriate person elsewhere at VCU.

The dean's office also is actively involved in understanding students and their needs, improving the quality of student life, and collecting and disseminating information important to students. Printed publications of this office include the VCU Resource Guide and the Handbook for Parents. Most Division of Student Affairs publications are available on the World Wide Web.

— — — [www.students.vcu.edu/dsa](http://www.students.vcu.edu/dsa)

The dean sits on a number of university committees, participates in orientation activities, provides supervision for several departments of the Division of Student Affairs, and serves as a key administrator for several major policy statements of the university including the VCU Honor System.

Students, parents of students, and staff who have issues they wish to discuss or who are interested in various programs and opportunities should visit the dean's office, located in the Sitterding House, 901 Floyd Ave., P.O. Box 843017, Richmond, VA 23284-3017. Telephone (804) 828-8940 or send e-mail to [whduvall@vcu.edu](mailto:whduvall@vcu.edu).

### Office of the Dean of Student Affairs, MCV Campus

**Dr. Robert L. Clifton**

Dean of Student Affairs, MCV Campus (1981)  
 A.B. 1963 University of Michigan  
 M.A. 1969 East Michigan University  
 Ed.D. 1977 Wayne State University

The Office of the Dean of Student Affairs, MCV Campus, provides supervision for the operation of Larrick Student Center, advises the MCV Campus Student Government Association, participates in orientation sessions for each school on the MCV Campus, and is the primary administrator of the Rules and Procedures of Virginia Commonwealth University.

The dean's office is located in Bear Hall, 10th and Leigh streets, P.O. Box 980243. Telephone (804) 828-0525 or send e-mail to [rlclifto@vcu.edu](mailto:rlclifto@vcu.edu).

## Jonah L. Larrick Student Center (MCV Campus)

### James W. Miller

Director, Larrick Student Center (1985)  
B.S. 1978 University of Maryland  
M.A. 1981 Pepperdine University

The **Jonah L. Larrick Student Center**, located at 641 N. Eighth St., is a circular building with dining facilities on the first level and activity areas on the second level. The first floor cafeteria is available to boarding students as well as others on a cash basis. The lounge upstairs accommodates up to 375 people and is used for movies, dances, lectures, receptions, art exhibitions and other events. Offices are provided for the MCV Campus Student Government Association, the X-Ray yearbook and the MCV Campus Honor Council. Also available: separate areas for billiards and table tennis, television and listening to music.

The Student Center Board, composed of students, faculty and administrators, determines procedures, programs and priorities for the Larrick Center and helps determine student interests and needs.

To reserve activity space or for more information, telephone (804) 828-3438.

#### Larrick Center hours:

Monday - Friday 8:30 a.m. - 11 p.m.  
Saturday, Sunday 1 p.m. - 11 p.m.

## University Student Commons and Activities, Academic Campus

### Timothy A. Reed

Director (1998)  
B.S. 1982 University of Evansville  
M.A. 1985 Ohio State University

### Felicia L. Keelen

Associate Director for Student Activities (1992)  
B.S. 1990 Bradley University  
M.A. 1992 University of Connecticut

### John P. Leppo

Associate Director, Building Services (1992)  
B.S. 1976 Duquesne University  
M.Ed. 1978 University of South Carolina

### Henrietta Brown

Assistant Director for Business Services (1971)  
A.A.S. 1988 J. Sergeant Reynolds  
B.G.S. 1998 Virginia Commonwealth University

### Kirsten Hirsch

Assistant Director for Commuter and Information  
Services (1995)  
B.F.A. 1993 Virginia Commonwealth University

### Vacant

Coordinator for Greek Affairs

### Vacant

Activities Coordinator

### Christopher K. Mays

Coordinator for Student Organizations  
and Leadership (1998)  
B.S. 1995 University of Arkansas, Fayetteville  
M.S. 1997 Central Connecticut State University

### Yolanda Jackson

Volunteer Services Coordinator (1976)  
B.S. 1975 Virginia Union University  
M.Ed. 1990 Virginia Commonwealth University

### Janet Howell

Reservations and Events Manager

The facilities, services and programs of the University Student Commons and Activities are designed and implemented to bring together all members of the VCU community, thereby contributing to intellectual, emotional and social growth through informal interaction. A diverse offering of educational, social, cultural and recreational programs represents an invitation to make use of personal time as an integral part of the college experience. Students develop and refine citizenship, leadership, management and interpersonal skills through participation in programs, events and organizations with administrative and advising support from staff.

## The Commons

907 Floyd Ave.  
P.O. Box 842032  
Richmond, VA 23284-2032  
Tel: (804) 828-6500  
[www.students.vcu.edu/commons](http://www.students.vcu.edu/commons)

The Commons is a gathering place for the VCU community on the Academic Campus — students, faculty, staff, alumni and guests. The Commons provides an array of programs, facilities and services to meet the needs of daily life on campus. All the facilities and services in the Commons are conveniently accessible

to people with mobility impairments. Building hours during the academic year:

Monday-Thursday 7 a.m. - midnight  
Friday 7 a.m. - 1 a.m.  
Saturday 10 a.m. - 1 a.m.  
Sunday Noon - 11 p.m.  
(Holiday and Summer Session hours are posted.)

**Information services.** The Information Center is staffed by students ready to field any VCU-related question. Stop by, or call (804) 828-1981. Stay-In-Touch Television (SIT-TV), a system of video monitors located throughout the Commons, displays up-to-the-minute information about campus services and events as well as local weather, national news and sports.

**Lounges, meeting rooms and event spaces.** The Lobby Lounge is the crossroads of the Academic Campus — a great place to meet friends or watch people. The Plaza and Commuter Lounges offer quieter atmosphere. Art exhibition space includes the Art Gallery on the first floor. Meeting and event facilities include three conference rooms, the Forum Room, the Commons Theater, the Alumni Association Board Room, and the Commonwealth and Capital ballrooms. The Common Ground, on the lower level, offers students lounge space, large-screen television and free access to the World Wide Web and campus e-mail on a daily basis plus a regular schedule of alternative films, concerts, comedy shows and other entertainment. Break Point, the Commons game room, features pool tables, darts, table tennis, board games, the latest video games and regularly scheduled leagues and tournaments. The Reservations and Events Office schedules the use of space in the Commons as well as non-instructional use of some other Academic Campus facilities. To contact this office, telephone (804) 828-9502.

**General Services.** Dining and retail services include the first-floor food court, open for breakfast, lunch and dinner, hot meals and fast food on a cash or credit debit basis. A technology store, [online@vcu](mailto:online@vcu) offers computer hardware and software. A VCUCard office at the Main/Cherry entrance allows students to check accounts and add money to campus debit accounts. Other facilities of the Commons include a self-service U.S. Post Office station, two

Wachovia ATM locations, pay telephones, a coin-operated photocopier, and vending machines.

### Commuter Student Services

The Commuter Services and Off-Campus Housing Office is located on the first floor of the Commons Theater, 907 Floyd Ave., P.O. Box 842032, Richmond, VA 23284-2032. Telephone (804) 828-6492.

**Commuter Lounge.** The Commons provides several services designed to reduce the challenges that non-residential students face. The Commuter Lounge includes a Ride Board to connect drivers and riders for local and long-distance carpooling, connect ports to the campus network for students' laptop computers, a microwave for heating sack lunches, and lockers for rental by the semester. (Coin-operated lockers for short-term storage of personal belongings are located in Room 141.) Commuter assistants in the Off-Campus Housing Office provide referrals to other campus services and local bus service schedules.

**Off-Campus Housing Office.** This office offers assistance in locating residences in facilities that are not controlled by the university and are available to students on a non-discriminatory basis. (The university does not control or monitor privately operated off-campus housing facilities.) The office provides a free computerized listing service for roommate requests and for rental apartments, rooms and houses. Most listings are in the Fan District near the Academic Campus. The office also makes available a selection of brochures on topics ranging from tenants' rights to Richmond apartment guides. It is advisable for the student to inspect off-campus accommodations before leasing. Good quality apartments and rooms are limited, and students should make arrangements early.

### Student activities

The Student Activities Center is located in Room 018, University Student Commons, 907 Floyd Ave., P.O. Box 842035, Richmond, VA 23284-2035. Telephone (804) 828-3648.

Student Activities supports and encourages numerous opportunities for students to participate and provide leadership in social, cultural, service and recreational activities and

organizations. Students determine their own level of involvement, bearing in mind the need for balance between academic and cocurricular commitments.

#### Student organizations.

Involvement opportunities include the Academic Campus Student Government Association and its subcommittees (see "Students and University Governance"). Other student groups include the Black Caucus, fraternities and sororities, and more than 160 other departmental, religious, political, and special interest clubs and organizations. A complete directory of student organizations and information about how to become involved are available in both printed and World Wide Web versions.

**Programs and activities.** Students and staff collaborate to bring a wide variety of programs including New Student Orientation Night at the Commons, the Student Organization and Volunteer Opportunities (SOVO) Fair, Fall Block Show and Homecoming. Cultural events created by students and staff include the Commons Collage, VCU Celebrates the Holidays, Kwanzaa, Black History Month, Women's History Month and the Inter-Cultural Festival. Student activities staff and students also produce the Summer Programs series to keep things going through summer break.

**Leadership and service.** Student Activities invites students to develop crucial leadership experiences through workshops, retreats and a resource library. Service programs provide a link between VCU and the Richmond community through both one-time service initiatives and ongoing volunteer opportunities. Activities include blood drives, sponsorship of tutoring programs (Carver Promise and Adopt-A-School at Clark Springs Elementary), and the Alternative Spring Break program. An annual fair provides opportunities to meet representatives from community agencies seeking volunteers. Staff members provide interested students with a list of service opportunities, help identify programs of interest, and facilitate contact with those agencies.

### Honor societies

Chapters of the following national honor societies are located at VCU and

annually recognize students and faculty for their service and scholarship:

#### General societies

Golden Key National Honor Society – scholarship  
Phi Eta Sigma – freshman scholarship  
Phi Kappa Phi – scholarship

#### Discipline societies

Alpha Kappa Delta – sociology  
Alpha Phi Sigma – criminal justice  
Alpha Omega Alpha – medicine  
Alpha Sigma Chi – medical technology  
Beta Alpha Psi – accounting  
Beta Gamma Sigma – business  
Delta Pi Epsilon – business education  
Financial Management Association  
Gamma Theta Upsilon – geography  
Kappa Tau Alpha – mass communication  
National Honor Society – finance  
Omicron Delta Epsilon – economics  
Omicron Kappa Upsilon – dentistry  
Pi Kappa Lambda – music  
Pi Sigma Alpha – political science  
Rho Chi – pharmacy  
Phi Delta Kappa – education  
Phi Theta Epsilon – occupational therapy  
Phi Sigma – biological sciences  
Sigma Delta Pi – Spanish  
Sigma Zeta – medicine, dentistry, pharmacy and nursing  
Sigma Theta Tau – nursing  
Sigma Xi – scientific research  
Sigma Pi Sigma – physics  
Sigma Phi Alpha – dental hygiene  
Sigma Phi Omega – gerontology  
Psi Chi – psychology

MCV Campus students who excel in scholarship and leadership may be eligible for membership in honor societies related to their fields of study. In addition, MCV Campus students who meet established criteria may be elected to one or more of the following societies:

- **Phi Kappa Phi** is a national honor society that recognizes and encourages superior scholarship. It accepts members from applied and professional fields of study as well as from letters, arts, sciences and humanities. The VCU chapter was installed in 1977.
- **Sigma Xi Society** is a national honor society founded for the encouragement of research in science and recognizes individuals for research achievement or promise.
- **Alpha Sigma Chi** is an MCV Campus organization founded in 1938. It recognizes those individuals who excel in leadership and



service to colleagues, school and the university.

- **Sigma Zeta** is an honorary science fraternity that encourages and fosters knowledge of the sciences and recognizes attainment of high scholarship in the sciences. Gamma Chapter was installed at MCV in 1926.

## Student and university governance

The University Council, an advisory body to the university president, is the highest internal governance body at VCU. The council is made up of 27 faculty members, 10 students, 10 administrators, 10 classified staff members, and four subcommittees — the Committee on Student Affairs, the Committee on Academic Affairs, the Committee on Faculty Affairs and the Committee on Classified Staff Affairs.

## Academic Campus Student Government Association

The Academic Campus Student Government Association is composed of senators elected from the college and each of the six schools on the Academic Campus and an elected student body president and vice president.

The Academic Campus SGA provides opportunities for students to express themselves in the development and implementation of VCU policies, to develop and coordinate services and activities for students, and to budget and allocate student activities fees. Elections for student senators, student body president and student body vice president are held each spring. Appointments of at-large senators and student representatives to university committees are made as vacancies occur throughout the year.

The Student Government Association is organized into standing committees — Steering, Activities Programming Board, Appointments, Appropriations, Elections, Human Relations, Legislative Issues, Publicity, and Student Services — and non-elected at-large members are encouraged to join most of these committees. All meetings of the Senate are open to the public.

Additional information about the Academic Campus SGA is available from the SGA office in the Student Activities Center or by calling (804) 828-7551.

Many other opportunities to participate in departmental and/or school decision-making exist for students on the Academic Campus. Contact department or deans' offices for more information on committee participation.

## MCV Campus Student Government Association

The student body organization on the MCV Campus was formed to promote college activities; to promote a concern among students for each other and a greater identification with the university; to express a unified voice in matters that affect the best interest of the student body; and to foster a constructive relationship between the university and the community and state.

Representatives to the MCV Campus Student Government Association are elected from each class in each health science school on the basis of one representative per 40 students. SGA meetings are held monthly from September through April, except December, and are open to all MCV Campus students. The association sponsors such projects as blood drives and University Guest Day and provides a forum for discussion of student ideas and suggestions.

## Student media (Academic Campus)

### Commonwealth Times

Students write and edit the Commonwealth Times, a campus newspaper containing news, features, editorials, and reviews of timely topics. The offices are located in Room 1149 of the Temple Building, 901 W. Main St., P.O. Box 842010, Richmond, VA 23284-2010, (804) 828-1058.

### The Vine

This news magazine presents news of VCU's African-American and other multicultural students. The office is located in the Temple Building, telephone (804) 827-0646.

### Millennium

This publication produced by the English Club showcases creative writing by VCU students.

## WCVW

The student-operated radio station uses a carrier current line to some residence halls and cafeterias. Programming includes music, information, news, public affairs and public service announcements. WCVW studios and offices are located in the Temple Building, 901 W. Main St., P.O. Box 841961, Richmond, VA 23284-1961; telephone (804) 828-1057.

## University Career Center

### Dr. Napoleon L. Peoples

Director (1970)

B.A. 1968 Wilberforce University

M.Ed. 1969 Kent State University

Ed.S. 1970 Kent State University

Ph.D. 1977 Kent State University

### Thomas J. Halasz

Assistant Director (1997)

B.A. 1981 Western Michigan University

M.Ed. 1993 University of North Carolina at Greensboro

### Monyette L.F. Martin

Assistant Director (1998)

B.B.A. 1993 and M.Ed. 1996 James Madison University

### Linda C. Wilder

Assistant Director (1999)

A.A. 1983 Henry Ford Community College

B.A. 1987 University of Michigan

M.A. 1997 Oakland University

The Career Center's office is located on the first floor of the University Student Commons, 907 Floyd Ave., P.O. Box 842007, Richmond, VA 23284-2007; telephone (804) 828-1645.

### Hours:

Monday - Thursday 8 a.m. - 6 p.m.

Friday 8 a.m. - 4:30 p.m.

The Career Center assists students and alumni in identifying and achieving career goals. Specifically, the Career Center staff helps students to discover more about themselves, to explore career options, to decide on career directions, and to develop sound strategies for realizing their career goals.

The Career Center offers career and graduate education information, including computerized career as well as graduate school searches; a career library of more than 600 printed volumes and a video collection on job-search topics; computerized self-assessment, job search and Internet information access in the center's

computer lab; information on employers (such as annual reports, recruiting brochures, and directories); and graduate and professional school information.

Career planning is offered on a daily basis in individual sessions with a career counselor using assessments such as Strong Interest Inventory, Campbell Interest and Skill Survey, Myers-Briggs Type Indicator and Self-Directed Search. Students may attend presentations on topics such as job search skills, resume development and interviewing techniques. Students may see staff counselors on an individual basis, by appointment or during designated drop-in times.

Through the Alumni Career Advisers network, students can talk with VCU alumni already active in their career fields, gaining information and valuable contacts.

The Career Center maintains a bank of part-time, full-time, internship and seasonal openings including on- and off-campus work-study positions for Virginia students who are eligible for work-study. These are available 24 hours a day through the Career Center Web site. — — — [www.students.vcu.edu/careers](http://www.students.vcu.edu/careers)

Students can learn job search skills by participating in small group sessions on such topics as resume writing and interview techniques. Strategies, a Career Center guide for students that covers career development, job search and graduate school planning, is available on the Career Center Web page.

Seniors finishing within the academic year use the Career Center to interview with business, industry, government and education representatives who visit the office recruiting prospective graduates for openings in their organizations. Students registered with the center's database are included in referrals to employers and have access to job listings on computer. ALEX, the Virginia Employment Commission's Automated Labor Exchange, also is available at the center.

All students are urged to use the resources of the University Career Center.

## University Counseling Services

### Vacant

Director

### Dr. Janice H. Altman

Staff Psychologist (1998)  
B.A. 1977 Hofstra University  
M.A. 1989 University of Maryland-College Park  
Ph.D. 1997 University of Illinois at Urbana-Champaign

### Dr. D. Craig Anderson

Staff Psychologist (1999)  
B.A. 1978 Colgate University  
M.Ed. 1986 College of William and Mary  
Ph.D. 1998 Pennsylvania State University

### Joy G. Bressler

Assistant Director (1992)  
A.S. 1971 Marshall University  
B.S. 1982 and M.S.W. 1986 Virginia Commonwealth University

### Dr. Christina L. Riebeling

Staff Psychologist (1997)  
B.A. 1989 College of William and Mary  
M.Ed. 1992 and Ph.D. 1996 University of Virginia

### Dr. Kathleen J. Scott

Staff Psychologist and Coordinator of the Training Program (1986)  
B.S. 1978 St. Lawrence University  
M.S. 1982 University of Utah  
Ph.D. 1985 University of Utah

### Kristi M. Vera

Staff Social Worker (1998)  
B.A. 1982 and M.A. 1993 College of William and Mary  
M.S.W. 1997 Virginia Commonwealth University

Students with personal, social, vocational or educational needs may find help from University Counseling Services. The goals of UCS are to promote students' academic success and personal growth as well as to assist students who are experiencing stress or crisis.

The University Counseling Service offers services from two offices, one on each campus. The contact information for each follows.

### Academic Campus

#### Commons

907 Floyd Ave., Room 225  
P.O. Box 842525  
Richmond, VA 23284-2525  
Tel: (804) 828-6200

#### Hours:

Monday - Thursday 8 a.m. - 6 p.m.  
Friday 8 a.m. - 4:30 p.m.

During semester break, spring break and summer, the office closes at 4:30 p.m. daily.

### MCV Campus

#### Hunton Hall

302 N. 12th St., 3rd Floor  
P.O. Box 980238  
Richmond, VA 23298-0238  
Tel: (804) 828-3964.

#### Hours:

Monday - Friday 8 a.m. - 4:30 p.m.

University Counseling Services can meet students' needs in a variety of ways:

**Group counseling.** Ongoing psychotherapy groups focus on personal and social concerns including drug and alcohol related issues, eating disorders, self esteem, depression, sexuality, problems with parents or peers, stress, career choice and identity.

**Counseling and psychotherapy.** Individual and couple work is designed to deal with personal and interpersonal issues.

**Academic Success Program.** Weekly workshops and computerized assessment and interventions focus on development of the practical skills and academic strategies necessary for students to achieve academic excellence in the classroom.

**Consultation and outreach.** Presentations, workshops and staff consultation are available to student organizations, academic departments and other groups on issues relevant to each group's needs.

**Multicultural Training Program.** Consultation and workshops are designed to prepare students, faculty and staff to function effectively in a multicultural environment.

**Career counseling.** Individual sessions designed to clarify career direction and satisfaction.

**Testing.** Vocational, intellectual and personality assessments.

Available to both day and evening students, counseling services are free except for small fees associated with testing. All students requesting services will be guided to the appropriate program or counseling service based on an individual assessment of needs and concerns.

## University Student Health Services

### Dr. Betty Anne Johnson

Director (1985)  
B.A. 1973 Colorado Women's College  
Ph.D. 1981 University of Iowa  
M.D. 1982 Harvard Medical School

### Betty Reppert

Associate Director for Health Promotion (1983)  
B.S. 1978 Wake Forest University  
P.A. Certificate 1978 Wake Forest University  
M.P.H. 1997 Virginia Commonwealth University

### Doris Rice

Assistant Director for Administration (1988)  
B.B.A. 1980 University of Houston

**Linda Hancock**

Assistant Director for Health Promotion (1987)  
B.S. 1974 University of Maryland  
M.S. 1984 Virginia Commonwealth University

**Nancy L. Harris**

Women's Health Coordinator (1997)  
B.S. 1982 American University  
M.S. 1986 Virginia Commonwealth University

**Diane Gay Cutchin**

Health Coordinator (1996)  
B.S. 1987 and M.S. 1995 Virginia Commonwealth University

**Sandra L. Thomsen**

Health Educator (1998)  
B.A. American University  
M.P.H. 1998 University of North Carolina at Chapel Hill

**Tiffany Hinton**

Substance Abuse Services Coordinator (1998)  
B.S. 1997 and M.P.H. 1999 Virginia Commonwealth University

**Academic Campus****Gladding Residence Center**

711 W. Main St., Suite 159  
P.O. Box 842022  
Richmond, VA 23284-2022  
Tel: (804) 828-8828

**Hours:**

Monday - Thursday 8 a.m. - 5 p.m.  
Friday 10 a.m. - 5 p.m.

**MCV Campus****VMI Building**

1000 E. Marshall St., Room 305  
P.O. Box 980201  
Richmond, VA 23298-0201  
Tel: (804) 828-9220

**Hours:**

Monday - Thursday 8 a.m. - 4:30 a.m.  
Friday 10:30 a.m. - 4:30 p.m.

University Student Health Services (USHS) offers quality primary health care for treatment of acute and chronic illness. In addition to diagnosis and treatment, the service emphasizes prevention of illness through screening, counseling, and health education. Full-time students are required to participate and must pay the student health fee. Part-time students who elect to participate in the service must pay the full student health fee.

The service is staffed by physicians, physician assistants, nurse practitioners,

registered nurses, pharmacists and health educators.

Services offered by USHS include general medical, allergy, and gynecology clinics; pharmacy and laboratory; after-hours emergency care; and health education and public health programs.

All educational activities sponsored by USHS are available to all students.

Treatments for injury and hospitalization are not covered by USHS, and students are urged to join the university-sponsored group health plan.

**Immunization requirements**

Virginia law requires all full-time students to submit an official certification of immunization to University Student Health Services prior to registration. Immunization records may be mailed, faxed or brought to Student Health Services at the Academic Campus as listed previously.

**Do not mail, fax or turn in your immunization record anywhere else. (If record is turned in at STAR, put it in the box marked immunizations.) Do not send immunization records to Office of Undergraduate Admissions.**

It is strongly recommended that all students make copies of their immunization record form. For questions or a copy of the immunization certificate, call the Academic Campus as listed previously.

The immunization form can be signed by the student's health care provider after all the necessary information has been transferred onto the form. Other acceptable records would be immunization dates from military records, health department records, and high school records. An immunization form can be found in the Handbook for Admitted Students and on the Web. — — — [www.students.vcu.edu/health/immunizations](http://www.students.vcu.edu/health/immunizations)

If documented evidence of required immunization proof cannot be provided, students must get the necessary immunizations from their health care provider, local health department, or through Student Health.

**For all students born after Dec. 31, 1956, student must provide:**

**Tetanus:** Documentation of Tetanus booster within the last ten years.

**Rubeola (Red Measles):** Two doses, both given after the first birthday, at least one month apart, and after 1967,

or physician certification of diagnosis of Rubeola, including the month and year of occurrence, or documentation of positive Rubeola titer with copy of lab result.

**Mumps:** One dose given after first birthday and after 1967, or physician certification of diagnosis of Mumps, including month and year of occurrence, or documentation of positive mumps titer with copy of lab result.

**Rubella (German Measles):**

Documentation of Rubella vaccination given after the first birthday and after June 9, 1969, or documentation of positive Rubella titer with copy of lab result.

**NOTE:** MMR given after first birthday and after April 30, 1971, may be used to document Rubeola, Mumps and/or Rubella immunization. Two MMRs would be needed to fulfill Rubeola requirement.

**PPD:** Requirement to be fulfilled at USHS Clinic after beginning classes.

**For students born prior to Jan. 1, 1957, only, the student must provide:**

**Tetanus:** Documentation of Tetanus booster within the last ten years.

**Rubella (German Measles):**

Documentation of Rubella vaccination given after the first birthday and after June 9, 1969, or documentation of positive Rubella titer with copy of lab result.

**PPD:** Requirement to be fulfilled at USHS Clinic after beginning classes.

**Health insurance**

The university is not responsible for accidents occurring to students in connection with class, laboratory, shop, fieldwork, athletics, student activities, travel or any other activity.

The university offers its students an approved insurance plan providing substantial benefits at group rates. The insurance extends for a 12-month period beginning Aug. 18, or from the beginning of the second semester to the next Aug. 18, and includes coverage for accidents, hospitalization, medical, surgical and other benefits for illnesses. Married students may enroll spouses and children. The university strongly recommends but does not require that all students enroll in student group health insurance.

Complete information about enrolling is available from University Student Health Services at both locations.

## Health promotion

The Office of Health Promotion, located in the Gladding Residence Center, Suite 165, provides information, programming and other resources in support of students' continuing health and well being. The resource library includes videotapes and Internet access as well as printed publications. The staff is available for presentations to classes and student organizations on a variety of topics related to college student health issues. The staff also supports and trains a peer-education program called Project REACH (Rams Educating About Campus Health). This peer program addresses substance abuse, nutrition, sexuality, sexual assault and relationship violence.

## Sexual Assault/Substance Abuse Education programs

A component of the Office of Health Promotion is Sexual Assault/Substance Abuse Education programs, which has offices in the University Student Commons, rooms 220-221. The offices serve as the main point of contact for information and services in these areas. The coordinators provide or arrange for presentations about alcohol and other drugs or issues related to sexual assault for student groups, classes, and special events such as Alcohol Awareness weeks and Sexual Assault and Domestic Violence Awareness Month. This office also offers "On Campus... Talking About Alcohol" (OCTAA), a primary prevention program, for students and professionals. This office offers leadership for the campus on sexual assault policy, protocol, educational programming, and services development.

In addition, this office helps coordinate the efforts of VCU's Rape Services Consultants Program, a group of trained volunteers from the university's faculty and staff, who help survivors of sexual assault obtain services. Students wishing to use this service may make contact by calling any one of several offices on campus.

- **Sexual Assault Education Programs**  
(804) 828-2085
- **Substance Abuse Education Programs**  
(804) 828-2086

## University Housing and Residence Education

### Bernard A. Mann

Director of Housing (1970)  
M.S.Ed. 1973 Virginia Commonwealth University

### Jane M. Grassadonia

Director of Residence Education (1993)  
B.A. 1983 Washington State University  
M.S.Ed. 1991 University of Rochester

### Joseph J. Dietrich

Coordinator of Residence Education (1992)  
B.S. 1981 Bowling Green State University  
G.T.H. 1981 Baptist Bible College  
M.S. 1984 Southwest Missouri State University

### Jeannine Belton

Coordinator of Residence Education (1999)  
B.A. 1991 Central Michigan University  
M.S. 1994 State University of New York at New Paltz

### Catherine Green

Coordinator of Residence Education (1999)  
B.A. 1990 University of California, Santa Barbara  
M.S. 1997 Iowa State University

### Augusta Pool

Housing Manager (1999)

### Roderick Burke

Housing Manager (1985)  
B.A. 1972 University of Richmond

### Samuel Stuart

Housing Manager (1983)  
B.S. 1983 Virginia Commonwealth University

Living accommodations on campus are provided for the convenient housing of students and to further the educational objectives of the university. Approximately 2,500 students live in university-operated housing, which varies in capacity and style, including high-rise residence halls, suites and garden-style apartments.

VCU believes residence hall life provides an opportunity for students to gain a variety of personal learning experiences that supplement and complement the formal learning gained in classrooms and laboratories. The housing program seeks to make residences a place where students learn to meet and live successfully with other students and to assume major responsibility for their own lives and the

atmosphere of their living environment. University housing also helps students participate in many educational and social programs and develop leadership skills through participation in residence, governmental, social, and judicial organizations.

Residence education staff members facilitate these objectives and are always available to assist students in the residence areas. Although acceptance for admission to the university does not guarantee housing facilities to the new student, all students in past years desiring student housing have been accommodated. See the "Room and Board Fees" section in Part III of this bulletin.

Rooms in university-operated housing are rented for the entire academic year of nine months. Single-semester contracts are available only to new students who enter the university and sign contracts to enter the residence hall beginning in the spring semester. The student, parent of the student or student guardian contracts to pay the rent for this period.

All rooms are furnished adequately, but students may wish to add personal touches and conveniences of their own. As the buildings vary in age and occupancy, it is best to wait until arrival to decide on any extra furnishings. Students should provide their own pillows, bedspreads, linens, and blankets. Coin-operated washers and dryers are located in each building.

For more information, contact the Central Housing/Residence Education Office, Gladding Residence Center, 711 W. Main St., P.O. Box 842517, Richmond, VA 23284-2517; telephone (804) 828-7666.

## Recreational sports

### Susan Ivie Boling

Director (1983)  
B.S. 1975 University of Iowa  
M.A. 1977 University of Iowa

### Tom Diehl

Associate Director (1995)  
B.S. 1982 Syracuse University  
M.S. 1990 Syracuse University

### Jennifer L. Chapman

Assistant Director (1993)  
B.S. 1986 Eastern Kentucky University  
M.A. 1990 Murray State University

**David Hefflin**

Assistant Director (1996)  
B.S. 1992 Virginia Commonwealth University  
M.S. 1994 Virginia Commonwealth University

**McPherson G. Elliott**

Facility Coordinator (1984)  
B.S. 1961 Citadel  
M.A. 1973 West Virginia University  
B.F.A. Virginia Commonwealth University

**Greg Hawkins**

Outdoor Adventure Program Coordinator (1998)  
B.S. 1994 Sam Houston State University  
Master's in Recreational Administration 1996 Georgia Southern University

**Dr. Eric W. West**

Coordinator, Fitness/Wellness Program (1998)  
B.S. 1987, M.S. 1989 and D.A. 1998 University of Tennessee at Knoxville

**Karen R. Carden**

Aquatics/Intramural Sports Coordinator (1999)  
B.A. 1969 Elon College  
M.Ed. 1985 University of North Carolina - Greensboro

**Beth Brunnelle**

Evening Coordinator (1998)  
B.S. 1995 State University of New York at Cortland  
M.S. 1997 University of Wisconsin at LaCrosse

A variety of facilities, services, and programs designed to meet the leisure and health needs of the VCU community are coordinated by the Recreational Sports staff. All currently enrolled students with valid identification are eligible to use all facilities. All facilities also are available to people from the following groups who purchase a membership: spouses of students, alumni, spouses of alumni, faculty, spouses of faculty members, classified and hourly staff, spouses of classified and hourly staff members, and employees of the Research Park and MCV Physicians. (Membership for spouses of MCV Physicians members are not offered at this time.)

**Recreational sports facilities**

The **Stuart C. Siegel Center** includes a 7,000-square-foot fitness center; a multipurpose gym for indoor soccer, floor hockey, volleyball and basketball; and a wellness resource center. The main offices for Recreational Sports are located in this facility.

The **Cary Street Recreation Complex** offers a gym floor that can

be used to play basketball, volleyball, or badminton; a fitness center; a wooden aerobics/dance floor; four racquetball courts; and a large assortment of fitness equipment. The complex also features a lighted artificial-turf field, jogging track and lighted outdoor basketball courts.

The **MCV Campus Recreation and Aquatic Center**, located at 10th and Turpin streets, includes a gym with playing courts and workout areas complemented by the new Aquatic Center, housing a 25-meter, six-lane swimming pool and a new lighted outdoor tennis court.

The **Recreation Center** features a gym floor that can be used for basketball, volleyball and indoor tennis; a fitness center with selectorized and free weight equipment; numerous racquetball and squash courts; and multipurpose rooms.

The **Aquatic Center** features recreational swimming, learn-to-swim classes; and water fitness and sports activities. For additional information, telephone (804) 828-6100.

**Additional facilities** on the Academic Campus include lighted tennis courts near the Cary Street Complex, which are administered by the Athletic Department. An indoor pool is available on a limited basis in the basement of the Franklin Street Gym. For additional information, call (804) 827-1100.

**Recreational Sports Programs**

**Intramural sports.** Available on both campuses, these sports offer students organized men's, women's and co-recreational leagues and tournaments. Activities include traditional team sports such as flag football, soccer, volleyball, basketball, indoor soccer, floor hockey and softball as well as individual and dual sports such as tennis, racquetball and table tennis.

**Fitness programs.** Offered at both recreation centers, these programs include classes in step aerobics, weight training, yoga, dance and more. Special programs include wellness days, personal training, and special Fitness Week activities.

**Sport clubs.** These clubs give students the opportunity to train and compete on a higher level than is offered by the Intramural Sports Program. For information about these clubs or about

starting a new club, call Recreational Sports.

**Special events.** One-day events are offered to provide short-term opportunities to participate.

**Outdoor Adventure Program and Outing Rental Center.** This program and center provide a variety of outdoor recreational opportunities for students. Organized excursions with experienced trip leaders include camping, kayaking, white water rafting, canoeing, caving, climbing, bicycling, backpacking and cross-country skiing. Many OAP trips are designed for beginners. All necessary equipment is included in the trip fees. Summer and holiday trips are provided including downhill skiing in Vermont, backpacking in the Grand Canyon and more.

For students planning their own outdoor activities, equipment can be rented at the Outing Rental Center. For a nominal fee, canoes, backpacks, tents, and cross-country skis can be rented on a short-term basis.

The Outdoor Adventure Leadership Program teaches interested student volunteers a variety of outdoor skills and prepares them to lead wilderness trips.

Information on trips and rentals is available at the Outing Rental Center. For additional information, call (804) 828-6004.

**University policies and procedures**

A number of policies and regulations at VCU affect students, and many of these are printed in Parts II, III and VI of this bulletin. Three policy documents are of particular interest to students.

The Virginia Commonwealth University Rules and Procedures document outlines the rights, responsibilities and privileges of each member of the university community and describes cases when disciplinary action, including separation from the university, may be taken against a member of this community as a result of prohibited behavior as outlined in this document.

The VCU Honor System defines academic dishonesty and provides a procedure for judging alleged violators of academic integrity.

The Grade Review Procedure outlines the process whereby students may appeal grades that they feel have been assigned unfairly.

Each student is responsible for being familiar with the provisions of all university policies and regulations. The three policy documents described above are printed in full in the VCU Resource Guide, which is distributed each year on both campuses and made available on the World Wide Web. Students who have questions about these or other policies are invited to call or visit.

#### Office of the Dean of Student Affairs

Sitterding House  
901 Floyd Ave.  
P.O. Box 843017  
Richmond, VA 23284-3017  
(804) 828-8940

#### Office of the Dean of Student Affairs, MCV Campus

Bear Hall, Room 104  
10th and Leigh streets  
P.O. Box 980243  
Richmond, VA 23298-0243  
(804) 828-0525

### VCU Honor System

VCU recognizes that honesty, truth, and integrity are values central to its mission as an institution of higher learning.

And so, VCU must act to maintain these values, even to the point of separating those who violate them from the university. The VCU Honor System describes the responsibilities of students, faculty and administration in upholding academic integrity, while respecting the rights of individuals to the due process offered by administrative hearings and appeals. All people enrolled in any course or program at VCU and all people supervising the learning of any student are responsible for acting in accordance with the provisions of the VCU Honor System.

The honor system gives definitions and illustrative examples of six acts which are violations of the policy, namely: cheating, plagiarism, facilitating academic dishonesty, abuse of academic materials, stealing and lying. There are six penalties for students found guilty of these honor system violations. They are honor probation, assignment of grades, suspension, expulsion, revocation and other relevant sanctions.

See the VCU Honor System, printed in full in the VCU Resource Guide.

### First Year Student Services

#### Robert W. Aaron

Coordinator (1996)  
B.A. 1993 University of Rochester  
M.A. 1996 Ohio State University

The programs administered by this office are designed to serve the needs of all entering freshmen and new transfer students and their families.

**The Compass Center** is open throughout the academic year. Its central location in the University Student Commons lobby provides a cozy drop-in center for first-year students. The goal is to provide basic information on and referrals to various VCU student services. Important information on the different university "seasons" (registration, finals, midterms, etc.) is promoted in this space. Also, the center facilitates visits from other departments to provide extra assistance to first-year students on a drop-in basis.

**Student Testing, Advising and Registration (STAR)** offered each summer, fall and spring provides new students the opportunity to take placement tests, meet with a faculty adviser, and register for the first semester's classes. Students' families are provided programs on VCU services.

**New Student Orientation** is a three-day program for new students that takes place immediately before fall classes begin. During orientation, students meet faculty, staff, administrators, and upper-class students. They attend information sessions, workshops and campus tours.

**VCU Family Weekend** is designed to bring parents and families back to see the university after students have registered and attended classes. Each school and college of the university has a chance to meet with the families of its students. Family members participate in a number of programs and special events that highlight the faculty, students and activities of VCU.

For more information about any of these programs, contact First Year Student Services, located in Commons Room 116, 907 Floyd Ave., P.O. Box 842032, Richmond, VA 23284-2032; telephone (804) 828-3700.

### Office of Multicultural Student Affairs

#### L. Victor Collins

Director (1989)  
B.A. 1973 Defiance College  
M.A. 1974 Western Michigan University

The Office of Minority Student Affairs (OMSA) provides supportive services to ethnic, racial and cultural minority groups that are substantially represented at the university. VCU is committed to a multicultural, diverse student body, and OMSA offers assistance to students and faculty in support of this commitment.

OMSA also manages the Center for Multicultural Activities and serves as an advocate group for multicultural students' concerns and interests. OMSA provides individual and group counseling and advice to a wide array of multicultural groups.

OMSA also advises groups and individuals seeking improved understanding of races and cultures represented at VCU. In this way, the office seeks to supplement the opportunities for student growth and development at the university.

All students are urged to visit the Office of Multicultural Student Affairs located on the ground floor of Sitterding House at 901 Floyd Ave., P.O. Box 843017, Richmond, VA 23284-3017; telephone (804) 828-6672, and the Center for Multicultural Activities located in the University Student Commons.

### Student Academic Support Services, MCV Campus

#### Donald G. Roebuck

Director

This support is a personal service, located administratively under the Office of the Vice President for Health Sciences, designed to help individuals find ways to deal with the demands imposed by the health sciences curriculums and to help them become effective and efficient learners. Students meet with an academic skills counselor for an assessment of their learning needs. The counselor will then offer suggestions and strategies for dealing with their concerns.

SASS activities include counseling for academic self-concept issues; anxiety reduction; and learning strategies

such as analyzing and organizing information, study methods, time management, test taking skills and writing skills. Limited screening for learning disabilities and attention deficits is available. Students are referred to other sources for formal evaluation if disabilities are suspected.

Services for students with disabilities for the MCV Campus are provided by this office. For further information, refer to "Services for Student with Disabilities."

The SASS office is located in the VMI Building, 1000 E. Marshall St., Room 301, P.O. Box 980124, Richmond, VA 23298-0124; telephone (804) 828-9782 or (804) 828-4608 TDD.

## Academic Success Center

### Dr. Quincy L. Moore

Executive Director (1985)  
B.S. 1972 Culver Stockton College  
M.S. 1975 University of Nevada, Las Vegas  
Ph.D. 1983 University of Iowa

### Dr. Xochela V. James

Associate Director (1979)  
B.S. 1968 Virginia State University  
M.S. 1975 and Ph.D. 1990 Virginia Commonwealth University

### Marilyn R. Day

Coordinator of Counseling (1981)  
B.S. 1976, M.Ed. 1979, and Administration and Supervision Certificate 1979 Virginia Commonwealth University

Lyons Jr., Joseph L. (1993) Counselor  
B.A. 1985 Norfolk State University  
M.A. 1986 Western Kentucky University

Gonzalez-Chapman, Wendy (1987) Counselor  
B.A. 1983 Ithaca College  
M.S. 1985 and Gerontology Certificate 1997 Virginia Commonwealth University  
Graves, Randall L. (1999) Counselor  
B.A. 1997 Nathaniel Hawthorne College  
M.Ed. 1979 University of Vermont

The mission of the Academic Success Center (ASC) is to provide assistance to students and faculty that will help students attain their academic potential. ASC will focus on the development of student success tools including both retention strategies and incorporation of instructional technology and other intervention methods. The center will provide a comprehensive approach to student and faculty development to enhance learning. The ASC will support linkages with the college, the schools, and other university services for the benefit of faculty and students.

The ASC seeks to enhance the success and promote the retention of all students. The center provides counselor support, academic planning, tutorial assistance, career planning, and a variety of seminars and workshops designed to meet the needs of VCU students.

## College Transition Program

This ASC program provides an alternative admissions process for students who marginally meet the university's requirements for admissions as full-time degree-seeking students. Students who are accepted into the College Transition Program have demonstrated potential for academic achievement that is not always indicated by their

SAT scores. Students admitted may be required to attend a developmental program during the summer before their university enrollment. Students enroll in courses in mathematics, English, reading/study skills and orientation to the university. This summer experience allows students to ease into the rigorous demands of university life by improving basic academic skills and personal confidence.

During the academic year, participants maintain close contact with the program and counselors. Students are monitored by their counselors to ease their adjustment to the university. College Transition Program participants are selected from a variety of academic, economic, geographic and cultural backgrounds. Early application to the university is encouraged, especially for students who also need financial aid. For information about the College Transition Program write to the Academic Success Center, Virginia Commonwealth University, P.O. Box 842500, Richmond, VA 23284-2500 or call (804) 828-1650.

## Tutoring

The University Tutoring Program sponsored by ASC is a free service available to full-time VCU students. The program offers peer tutoring to students enrolled in required freshman- and sophomore-level courses and assessment to determine needs in study skills development.





# University Resources and Services

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**To ensure a successful experience for its students, VCU offers many resources and services to its academic community — security, technology support, library services, food services, and parking and transportation. All of these services have been created to promote and develop the everyday lives of the VCU community.**



**VCU Resource Guide**

www.students.vcu.edu

**Business Services**

1111 W. Broad St. • P.O. Box 840208  
 Richmond, VA 23284-0208  
 (804) 828-3894 • Fax (804) 828-7867  
 www.bsv.vcu.edu

**Campus Police**

918 W. Franklin St. • P.O. Box 842024  
 Richmond, VA 23284-2024  
 (804) 828-1210 • Fax (804) 828-1199  
 www.vcu.edu/police

**Information Technology**

901 Park Ave. • P.O. Box 843059  
 Richmond, VA 23284-3059  
 (804) 828-6535 • Fax (804) 828-9001  
 www.vcu.edu/it

**Intercollegiate Athletics**

1200 W. Broad St. • P.O. Box 843013  
 Richmond, VA 23284-3013  
 (804) 828-4000 • Fax (804) 828-9428  
 www.vcu.edu/vcurams

**Equal Employment****Opportunity/Affirmative Action Services**

901 W. Franklin St. • P.O. Box 843022  
 Richmond, VA 23284-3022  
 (804) 828-1347 • Fax (804) 828-7201  
 www.vcu.edu/provost/eeoaa

Centered in an urban environment, Virginia Commonwealth University is enveloped in the growth and progress of its community. It must develop and maintain new, innovative programs for its students, faculty, and staff in order to promote and service their everyday lives. VCU has established a wide range of resources and services to assist the university community in their academic endeavors. These resources and services are housed in state-of-the-art facilities that support computer resources, libraries, bookstores, a technology store, mail, dining and printing services, parking and transportation, recreational sports, and intercollegiate athletics. All of these services improve the academic environment in which VCU and its community strive to achieve excellence.

For specific information on all of VCU's resources and services available to its community, refer to the VCU Resource Guide on the Web.

— — — www.students.vcu.edu/rg

**Business Services****Diane Reynolds**

Interim Director

VCU Business Services provides support for numerous auxiliary operations in order to maintain a healthy and growing academic environment. Consisting of dining, mail, printing services, parking and transportation, and retail stores, Business Services oversees the daily activities that keep the university functioning in an organized manner. These services offer various meal plans, parking and shuttle programs, intercampus and U.S. mail services, printing and copying services, and computer and academic supplies as well as other retail novelties in order to bring convenience to the lives of its students, faculty and staff. For further information about the various services, visit the Business Services Web site.

— — — www.bsv.vcu.edu

**Dining Services****Jean Clark**

Manager

Undergraduate students living in university residence halls must participate in one of the board plans offered by VCU unless they are living in self-sufficient apartment units with kitchens. Students residing off campus are encouraged to participate in the board plan and meal package programs.

VCU offers a number of different board plans ranging from the traditional 19 meals per week to the more flexible 10 meals per week plans. See Part III of this bulletin for additional information.

**Mail Services****Daniel Young**

Business Manager

The United States Postal Service (USPS) provides self-service postal vending machines in the lobby of the VMI Mail Center at 1000 E. Marshall St. on the MCV Campus and in the University Student Commons at 907 Floyd Ave. on the Academic Campus. Students can mail packages through the USPS from the Student Commons Postal Center.

All students living in residential housing have dormitory mailboxes. The address format is important for expedited

mail delivery and should not be altered from the examples that follow.

Student's Name  
 Room # Bear Hall  
 600 N. 10th St.  
 Richmond VA 23298-7000

Student's Name  
 Room # Cabaniss Hall  
 615 N. 8th St.  
 Richmond VA 23298-8000

Student's Name  
 (Room #) Gladding Residence Center  
 711 W. Main St.  
 Richmond, VA 23220-5500

Student's Name  
 Room # Johnson Hall  
 801 W. Franklin St.  
 Richmond, VA 23220-4103

Student's Name  
 Room # McRae Hall  
 600 N. 10th St.  
 Richmond, VA 23298-7000

Student's Name  
 Room # Rhoads Hall  
 710 W. Franklin St.  
 Richmond, VA 23220-4101

Student's Name  
 Room # Rudd Hall  
 600 N. 10th St.  
 Richmond, VA 23298-7000

Student's Name  
 Room # Warner Hall  
 600 N. 10th St.  
 Richmond, VA 23298-7000

**Parking and Transportation Services****Emma Minor**

Acting Manager

University Parking and Transportation Services has offices conveniently located on both campuses. Office hours are 8 a.m. to 4:30 p.m., Monday through Friday.

The Student Parking Program offers three subscriptions to fulfill the needs of VCU's diverse student population. Commuter student parking subscriptions provide guaranteed parking. Most facilities offer shuttle service and on-site dedicated security. Evening commuter students may purchase a discounted decal

allowing parking in unrestricted facilities weekdays after 3:30 p.m. University Housing students may purchase convenient deck parking, which features 24-hour security coverage.

Parking decals are not required for parking in unrestricted university facilities on weekends and on university-observed holidays.

For commonly requested information on parking and transportation related topics, please call (804) VCU-PARK (828-7275). Automated bulletin board information is available 24 hours per day, seven days per week. To speak with a customer service specialist, please call (804) 828-0501 between the hours of 8 a.m. and 4:30 p.m., Monday through Friday.

## Printing Services

### Daniel Young

Business Manager

Printing Services provides high quality offset printing and reproduction services to faculty, staff and students. Printing Services, through a university contractual relationship currently provided with Xerox Business Services, can assist with preparation, copying, duplicating, printing and distribution and delivery of documents.

### School of Business Copy Center

1015 Floyd Ave., Room 1122, (804) 828-7207  
Monday - Friday 8 a.m. - 5 p.m.

### Ginter House Copy Center

901 W. Franklin St., Room B8, (804) 828-1366  
Monday through Thursday 8 a.m. - 7 p.m.  
Friday 8 a.m. - 5 p.m.

### Hunton Hall Copy Center

Campus Room on the MCV Campus  
323 N. 12th St., (804) 828-9654  
Monday through Friday 8:00 a.m. - 5:00 p.m.

Printing Services also maintains coin/VCUCard-operated copiers on the Academic Campus. Two copy machines are located in the School of Business first floor vending area and one machine located near the postal center in the University Student Commons.

## Retail stores

### Dan McDonald

Business Manager

The VCU bookstores provide textbooks and other related materials required of VCU students. The VCU e<sup>2</sup> Bookstore maintains a large stock of used books. The Academic Campus and MCV Campus bookstores also carry an extensive line of study aids, reference materials, general books and magazines. Additionally, the bookstores offer a full line of art and office supplies, lab apparel, calculators, greeting cards, candies, snack items and a large assortment of licensed insignia items, including gifts, furniture and apparel. The MCV Campus Bookstore stocks an extensive line of medical instruments.

The VCU bookstores accept cash, VISA, Discover, MasterCard, American Express and the VCUCard. The stores accept personal in-state checks, and out-of-state checks are accepted during rush periods.

For refunds or exchanges, the customer must present a valid cash register receipt. Textbooks may be returned for a refund or exchange 15 days after the start of classes. The books must be in absolutely new, unmarked condition. After the third week of classes, new textbooks in fresh condition may be returned within two days of purchase.

### VCU e<sup>2</sup> Bookstore

West Broad Street Parking Deck  
1111 W. Broad St.  
(804) 828-1678, toll free (800) 489-3638

#### Regular hours:

Monday through Friday 7:30 a.m. - 8 p.m.  
Saturday 10 a.m. - 5 p.m.  
Sunday Noon - 5 p.m.

#### Extended rush hours:

Monday through Thursday 7:30 a.m. - 9 p.m.  
Friday 7:30 a.m. - 8 p.m.  
Saturday 10 a.m. - 5 p.m.  
Sunday Noon - 5 p.m.  
Used book buy back held daily.

### MCV Campus Bookstore

601 N. 10th St. (in the N Parking Deck)  
(804) 828-0336, toll free (800) 865-2777

Monday through Friday 7:30 a.m. - 5:30 p.m.  
Saturday 10 a.m. - 2 p.m.  
Used book buy back held daily.

The technology store, called online@vcu, is dedicated to providing high quality, competitively priced computer hardware, software and supplies. Because of special educational discounts, many of the computer products can only be sold to current students, faculty or staff. The sales staff can suggest computer product bundles

that include hardware, software and peripherals to meet the needs of a particular field of study.

Personal checks, cash, VISA, Discover, MasterCard and the VCUCard are accepted forms of payment. The store also can assist in arranging loan agreements.

### online@vcu

University Student Commons  
907 Floyd Ave.  
(804) 828-7295

#### Regular hours

Monday through Thursday 9 a.m. - 7 p.m.  
Friday 9 a.m. - 5 p.m.  
Saturday 11 a.m. - 3 p.m.

## Campus Police

The VCU Campus Police Department consists of professionally trained men and women who provide police and security services for the university community. All officers are sworn and certified in the commonwealth of Virginia and have passed state mandated training requirements prior to becoming VCU Police Officers. The department is open 24 hours a day, 365 days a year.

The Medical College of Virginia Hospital Security Department is a non-sworn, 24 hours a day, 365 days a year program. It is committed to the security and safety of the populace to enhance the hospital's continuous mission for patient care. The VCU Police Department augments the MCV Hospital Security.

The VCU Police Department has a University Security Department, which is non-sworn and consists of part-time employees, student auxiliary and volunteer students. These security guards wear a blue uniform that displays a security patch on the sleeve, and work inside the buildings and assist with escorts. They are assets to the VCU Police Department and assist as extra eyes and ears for the department.

The following specific programs are available to the members of the VCU community:

- tailor-made safety awareness or crime prevention oral presentations,
- rape awareness talks and a self-defense course designed for women called RAD (Rape Aggression Defense),
- physical security surveys, upon request, with accompanying recommendations and suggestions,

- escort services are available for both the MCV campus and the Academic campus. Call (804) 828-WALK for a walking or riding escort,
- a Local Management Group (LMG) program. This program is similar to local Neighborhood Watch programs across the nation,
- bicycle registration,
- individual security consultations,
- Operation Identification which is a program to engrave property,
- McGruff the Crime Dog is available for special functions,
- emergency telephones throughout both campuses,
- a robbery prevention handbook
- Campus-On-Watch brochures and handbooks,
- Campus Watch publication which is sent to employees monthly,
- Campus Watch addresses crime prevention tips and is designed by representatives of the Campus Police Department, and Victim/Witness Assistance.

The above services are available by contacting the Crime Prevention Section of the VCU Police. Call (804) 828-1214 for assistance in setting up a program.

### Emergency Reporting Telephone System

The ERTS is a set of special yellow call-box telephones placed at various campus locations (Academic and MCV) for emergency and non-emergency use. These phones operate as an enhanced 911 system when activated. The VCU Police can identify the location of the activated phone even if the caller is unable to speak. Once the phone is activated, an officer will survey the area unless the caller informs the dispatcher otherwise. These phones can also be used to request non-emergency assistance and information; however, these phones can only be used to contact VCU Police; therefore, callers cannot be transferred to outside lines. These phones have been installed for the benefit of the VCU community, and are there to enhance citizen safety and security.

### Information technology services

**Phyllis C. Self**

Vice Provost for Academic Technology

### Mark D. Willis

Executive Director, Administrative Information Technology

VCU provides a wide range of technology resources and services to facilitate the effective use and coordination of information technology-related activity across the university. These include mainframe computing, PC and server support, voice and data network infrastructure, and VCUCard services.

Basic services include e-mail and computing accounts; consulting in the use of computing resources; teaching short courses; advice on acquisition of computer systems; media production services; optical scanning for test grading, faculty evaluation and other surveys; and software site licensing.

### University Computing Services (UCS)

Academic Campus (UCS-AC):

P.O. Box 843008  
Cabell Library, Room B-30  
901 Park Ave.  
(804) 828-6650  
[www.vcu.edu/ucsac/](http://www.vcu.edu/ucsac/)  
Mon through Thu 8 a.m. - 5 p.m.; Fri 8 a.m. - 4 p.m.

MCV Campus (UCS-MCV):

P.O. Box 980016  
Sanger Hall, Room B3-015  
1101 E. Marshall St.  
828-9843  
[www.vcu.edu/ucsmcv/](http://www.vcu.edu/ucsmcv/)  
Mon through Fri 8 a.m. - 5 p.m.

University Computing Services (UCS) provides computing services for the research, instructional, health care and public service endeavors of VCU students, faculty and staff. UCS departments on the Academic Campus and the MCV Campus provide a full range of services and resources specifically designed to meet the unique needs of their users. Visit the UCS Web sites (listed above) for more information on computing resources and services.

### Computer accounts

Computing accounts are required to access e-mail, research and scientific computing facilities, and university information systems. Accounts are available to all VCU students, faculty and staff. Requests for personal UNIX

system accounts may be made at any of the stations located in front of the UCS Customer Service Window (in the basement of Cabell Library, Room B-9) or in the office located in B3-015 Sanger Hall. A valid VCUCard must be presented. Accounts also may be requested by visiting the following Web pages.

#### Academic Campus:

[www.vcu.edu/cgi-bin/reqacct/](http://www.vcu.edu/cgi-bin/reqacct/)

#### MCV Campus

[www.vcu.edu/ucsmcv/faq\\_pages/getting\\_a\\_computer\\_account.htm](http://www.vcu.edu/ucsmcv/faq_pages/getting_a_computer_account.htm)

After requesting an account, it must be activated by going to the Customer Service Window with a (valid) VCUCard. This activation may be done at any time after the request. Application forms for class accounts also are available at these locations. In addition, class accounts may be requested online using the online menu (call 804/828-8679 for assistance).

For more information, visit these Web sites.

#### UCS-AC:

[www.vcu.edu/ucsac/accounts.html](http://www.vcu.edu/ucsac/accounts.html)

#### UCS-MCV:

[www.vcu.edu/ucsmcv](http://www.vcu.edu/ucsmcv)  
(Click on FAQ, then Computer Accounts)

### Open-access labs

UCS maintains four open-access labs for students which provide access to computing facilities and feature the following software: Microsoft Office 97 Pro for Windows 95 (Word, Excel, Powerpoint, Access), SPSS, Netscape Navigator, Host Explorer (Telnet and TN3270 access), WS FTP, Norton Anti-Virus, ZoomText Xtra Level 1 (on adaptive workstation only), Connect.Net. Additionally, the Sanger Hall lab has SAS and Corel Graphics and Office Suite (WordPerfect). The labs are equipped with Macintosh and IBM PC-compatible workstations, local applications software, and software applications residing on Novell servers. The labs and their locations are:

#### Academic Campus

Cabell Library, Room B-8 (Academic Campus main lab)	
Monday through Thursday	7:30 a.m. - 1:30 a.m.
Friday	7:30 a.m. - 6:30 p.m.
Saturday	10 a.m. - 6:30 p.m.
Sunday	11 a.m. - 1:30 a.m.
Summer hours vary.	

Resources include 60 PCs, 12 iMacs with superdrives, and two Pay-for-Print laser printers as well as adaptive equipment for students with disabilities.

Business Building, Room 1121

Monday through Thursday 7:30 a.m. - 8:30 p.m.

Friday 7:30 a.m. - 4:30 p.m.

Weekends closed.

Summer hours vary.

This lab contains 35 PCs and one Pay-for-Print laser printer.

Student Commons Lower Level

Hours same as University Student Commons

Summer hours vary.

This lab has 15 PCs and one Pay-for-Print laser printer.

### MCV Campus

Sanger Hall B-3 (MCV Campus main lab)

Monday through Friday 8 a.m. - 5 p.m.

Summer hours vary.

24 hour access by graduate students, faculty and staff who have been added to the after hours access list.

Those wishing to be added to the list should come to Room B-015 and bring their valid VCUCard.

This lab is equipped with 25 PCs, six Macintoshes and five printers.

**Please note:** that several Schools have lab facilities available for their students. Examples are sites in the Temple Building, School of Social Work, School of Education, etc. Check with each school/college to see what computing facilities are available to students.

### UCS Help Desk

Academic Campus (804) 828-2227

MCV Campus (804) 828-9843

Information Technology services related to repairs and internet service providers are available at [online@vcu](mailto:online@vcu), a technology store owned and operated by VCU that provides the latest in technology, often at educational discounts, to students, faculty and staff. For more information please call (804) 828-7295 on the Academic Campus or (804) 828-5880 on the MCV Campus.

### Network Services

P.O. Box 843001

900 E. Main St., Suite 1141

[www.cns.vcu.edu](http://www.cns.vcu.edu)

VCUnet is an enterprise-wide data network designed to provide business class connectivity to university and departmental computing resources as well as the Internet. All residence-hall rooms at VCU will be connected to VCUnet by fall 2001. Currently, rooms in Rhoads, Johnson, Warner, Bear, Rudd

and McRae halls are connected. Wiring in Cabaniss Hall will be completed in Summer 2000 and in Gladding Residence Center by fall 2001. All new residence halls are designed to include network connections as part of construction.

To connect in residence-hall rooms, students will need a 10BaseT Ethernet card and an RJ-45 (UTP) patch cord. Please refer to the SCI Hardware and Software Specifications Guide that comes with your registration packet for recommended Ethernet cards and cables. For assistance configuring workstations or to report problems in residence-hall rooms or labs, users should contact VCU Housing technical support at (804) 828-1426. Problems encountered outside of the residence halls should be reported to the support person for that area. Please see the Trouble Reporting link on the Web for more details. Information about securing personal workstations can be found at on the Web site under the Network Security link.

VCUnet access to the Internet from off-campus locations or residence-hall rooms that do not have connectivity requires an account with an Internet Service Provider (ISP). This service is available at a VCU discount from [online@vcu](mailto:online@vcu), the campus technology store.

### Telecommunications Services

Telecommunications Services provides voice communications for the Academic and MCV campuses – faculty, staff and dormitory students – and for MCV Hospitals. Services include phone, fax and modem installation and removal, long distance service, voice mail, calling cards, equipment repair, directory publication and systems consultation. Administrative customers may call (804) 828-4331 for service. Dormitory students should call (804) 692-6000.

### VCUCard

Academic Campus

University Student Commons

Room 129D (Cherry Street Entrance)

Cabell Library

Room B-46, 901 Park Ave.

828-8385

MCV Campus

Tompkins-McCaw Library

509 N. 12th St., Room 1-025

(804) 828-2545

The VCUCard is what students need to identify themselves as members of the VCU community. In addition to being a picture identification card, it is a multi-functional card that is accepted for meal plans, debit payment for merchants on and off campus, and vending activities such as copying, printing and doing laundry. It also serves as a library card. VCUCard services currently include the following:

- **Identification:** Each new student may obtain his/her VCUCard immediately after registering for classes. Always carry your VCUCard and be ready to show it to any authorized university official who requests identification.
- **Library Card:** The card is used for all library lending services.
- **Off-line vending:** The vending program allows students and staff to pay electronically for photocopies, printing, Pepsi, and the use of laundry equipment in the residence halls.
- **Debit program:** This function allows students to make purchases without carrying cash at VCU dining facilities, bookstores, the parking decks on the Academic Campus, and merchants both on and off campus.
- **Security access:** The VCUCard is used to access some VCU buildings.
- **Banking:** Wachovia Bank offers banking services that can be accessed with your VCUCard.

If card is lost, report the loss immediately to a VCUCard Office and to VCU Libraries. Although there is no fee for the initial issuance of the card, there is a charge to replace it.

### Research and scientific computing

UCS provides resources in support of student, faculty and staff research and scientific computing. An SGI Origin 2000 and an IBM SP with extensive collections of software support high performance computing, research database applications, and statistical, mathematical, and scientific applications for researchers. Significant disk storage provides support for the storage and analysis of extremely large datasets. UCS provides consultative support in the use of these facilities, database design, statistical analysis and many of the software applications.

**Distance Education Program (DEP)**

Cabell Library, Room B-30  
901 Park Ave.  
P.O. Box 83008  
(804) 828-8470  
somoore@vcu.edu  
Monday through Friday 8 a.m. - 4:30 p.m.

The Distance Education Program develops and supports VCU's emerging distance education plan. DEP works closely with departments and schools to foster excellence in distance education programs and to advocate and promote the uses of distance education at VCU. DEP facilitates the sharing of distance education resources and expertise at VCU and with other universities and agencies at the state, regional, national and international levels.

**TML Distance Education Classroom**

Equipped with a wide range of media presentation devices, Tompkins-McCaw Library (Room 2010) operates both as a "smart classroom" and as a video conferencing facility. The TML Distance Education Classroom is scheduled through the Sanger Hall office of Media Support Services. Reservations may be made in person at Sanger Hall, Room B1-018, by phone at (804) 828-3400 or via e-mail at mssmcv@vcu.edu.

**Media Production Services (MPS)**

1101 E. Marshall St., Room B1-018  
P.O. Box 980062  
(804) 828-9590  
www.vcu.edu/mps/  
Monday through Friday 8 a.m. - 4:45 p.m.

MPS services include photography, graphic design, and video production. Service and price guides are available upon request. Services frequently used by students include passport and application photographs, film processing, slide duplication and 35mm slide production from computer presentation software (PowerPoint, Harvard Graphics, etc.).

**Media Support Services (MSS)**

Academic Campus  
P.O. Box 842033  
901 Park Ave., Room B-40  
(804) 828-1098

www.vcu.edu/mss/  
Monday through Thursday 8 a.m. - 9:40 p.m.  
Friday 8 a.m. - 4:30 p.m.

MCV Campus  
P.O. Box 980062  
1101 E. Marshall St., Room B1-018  
(804) 828-3400  
www.vcu.edu/mss/  
Monday through Friday 8 a.m. - 4:45 p.m.

Comprehensive audiovisual and television services include the circulation of AV equipment in support of academic activities, technical support for classroom-based AV equipment, instructional strategies using AV equipment, production and transmission of distance learning programming from facilities on both campuses, and the reception, recording, and distribution of off-air and satellite video programming. Services frequently used by students include audio and videotape sales and duplications and production of overhead transparencies. At its Cabell Library office, Media Support Services serves as the Academic Campus service point for photographic and graphic design services offered through Media Production Services.

**Student Computer Initiative (SCI)**

Cabell Library  
P.O. Box 843008  
901 Park Ave., Room B15  
(804) 828-8736  
www.vcu.edu/sci  
Monday through Friday 7:30 a.m. - 4 p.m.

As the use of technology in education becomes more ubiquitous, VCU faculty and students increasingly rely on e-mail, the Internet, digital media and other instructional technology to complement and enhance classroom, laboratory, and studio learning. At its November 1999 meeting, the VCU Board of Visitors endorsed the Student Computer Initiative (SCI). This initiative will require that all freshman and transfer students have a personal computer effective with the fall 2001 semester. With a personal computer, every student will have powerful and convenient access from their homes or their dorm rooms to the rich array of learning resources available on campus and the World Wide Web.

**Web Support Services (WSS)**

Cabell Library  
P.O. Box 842033  
901 Park Ave., Room 123  
(804) 828-2192  
www.vcu.edu/web/  
Monday through Friday 8 a.m. - 4:30 p.m.

Web Support Services provides management and support services for the VCU Web site and collaborates with other organizations at VCU in developing Web-based applications. The primary function of WSS is to support Web publishing at VCU by providing training, consulting, online documentation, and Web publishing standards. WSS is responsible for the design and features of the VCU Web site, including the VCU Home Page. Guidelines for appropriate use of VCU computing resources are available on the Web.

-- www.vcu.edu/web/policy

This site contains VCU Web guidelines, VCU Policy on Guidelines for Using Electronic Information Systems and Office Equipment, and the VCU Ethics Policy on Computing.

**Student information access**

Students can access their personal academic and account information as well as conduct selected business activities at VCU using various technologies. Student information kiosks, university Web sites and touch-tone telephone systems permit students to retrieve information and conduct business at times and places convenient for them.

**Information kiosks**

Seven touch-screen student information kiosks on the Academic and MCV campuses allow anyone access to information on university programs, policies, events and schedules. Continuing students have the ability to access and print their individual student records for grades, class schedules, unofficial transcripts, financial aid and student accounting information. Access to individual records requires your student identification and personal identification number.

In addition, several frequently used forms are available, including the Graduation Application, Personal Update Form and Official Transcript Request. These and other forms can be

printed and even faxed to the appropriate office from any of the VCU kiosks.

Each kiosk provides a telephone handset and automatic dialing capability to both individual faculty and staff and to departments. Kiosks are located in:

- University Student Commons first floor lobby
- Founders Hall 1st floor lobby
- Business Building Floyd Avenue lobby
- Cabell Library second floor
- e<sup>2</sup> Bookstore
- Larrick Dining Center
- Sanger Hall lobby – coming soon

## Web

VCU students can access their individual records on the university's Web site. Currently available are grades, schedules, unofficial transcripts, account transaction detail and financial aid information. Access is restricted to students enrolled in the current or most recent semester.

— — — [www.atsreports.adm.vcu.edu/students](http://www.atsreports.adm.vcu.edu/students)

Or, start on the VCU Home Page and select Resources for Current Students and then Student Records Access. Users will be prompted for a student identification number and personal identification number (PIN).

— — — [www.atsreports.adm.vcu.edu/students](http://www.atsreports.adm.vcu.edu/students)

## Telephone

VCU students can register for classes, perform add/drop and access their schedule and their grades using a touch-tone telephone via the university's Integrated Voice Response (IVR) system. The hours of operation are 8 a.m. until 7:30 p.m., Monday through Friday; and 8 a.m. until noon on Saturday. The telephone number is (804) 828-1495. This service is available only to continuing students and is not available to first-time freshmen. Advanced registration via IVR is available, in the following order, to honors, graduate students, seniors, juniors, sophomores, second-semester freshmen, then special students. The registration schedule is published in the Schedule of Classes which also includes dialing instructions and a Telephone Registration Worksheet that should be completed before calling. Course call numbers control registration and

add/drop on the IVR. Using the telephone keypad, students must enter their student identification number and PIN. Students are then presented with options to select for registration, grades or course schedule.

After an initial registration at STAR or at the Student Services Center, students are encouraged to register for Academic Campus classes by using the telephone registration system.

Academic Campus students also may adjust their schedules by adding, dropping or withdrawing using telephone registration according to deadlines published in the academic year calendar. Students should consult their academic advisers on course restrictions and degree requirements.

Continuing students also can access their account balances and financial aid information via telephone. By dialing (804) 828-4927 from a touch-tone telephone anywhere in the world, a student can determine account balance, the amount of financial aid estimated or disbursed, the amount and status of any refund owed, the amount of any outside scholarships awarded, and the amount of any tuition waivers for which he or she is eligible. The system provides the option to speak with employees in the Student Accounting Department or the Office of Financial Aid if there is a question. Students should look for directions on how to use this system in the Schedule of Classes.

## VCU Libraries

### John E. Ulmschneider

Executive Director

#### Academic Campus

James Branch Cabell Library  
P.O. Box 842033  
901 Park Ave.  
General information: (804) 828-1110  
Reference services (Voice/TDD): (804) 828-1101

#### MCV Campus

Tompkins-McCaw Library  
P.O. Box 980582  
509 N. 12th St.  
Service desk: (804) 828-0636

[www.library.vcu.edu](http://www.library.vcu.edu)

VCU Libraries administers the major research libraries on both campuses. Collections totaling more than 1.5 million volumes are housed in James

Branch Cabell Library and Tompkins-McCaw Library. The libraries offer a variety of services, including reference assistance, instruction and outreach services, and interlibrary borrowing of materials.

## Online resources

The online catalog links the libraries on both campuses and enables students to determine the status of library materials. The catalog can tell if a book is on the shelves, checked out, being repaired, or on order from the publisher. If a student cannot find a book that is listed as being on the shelves, the Cabell Library Access Services staff or Tompkins-McCaw Library Service Desk staff will conduct a search. On-site and remote searching of electronic databases is available through the VCU Libraries Web site. The databases — including ABI-Inform, BIOSIS, Cumulative Index to Nursing Literature, Current Contents Connect, Dow Jones, ERIC, InfoTrac, Lexis/Nexis Academic UNiVerse, MEDLINE, Public Affairs Information Service, PsycINFO, SearchBank, the Web of Science and hundreds of others - provide online access to listings of journal articles and other materials. Dow Jones, InfoTrac and Lexis/Nexis contain full-text articles, some with graphics, from selected publications. These databases may contain citations and abstracts and indicate if the libraries own the journals. Increasingly they link to the full text.

Numerous additional specialized online databases can be searched by the Cabell Library Reference Services staff or Tompkins-McCaw Library Service Desk staff to generate bibliographies. This service is fee based. Reference and other public service staffs provide assistance in using online databases and CD-ROM resources available at both libraries. Access to these services and systems is free to VCU students, faculty and staff. Also, both libraries offer a broad array of free workshops and are equipped with facilities to support instruction.

Check out procedures and copying charges. The VCUCard serves as a library card as well as an identification. Undergraduates may check out up to 50 books for 21 days, while graduate students may check out up to 100 books for 42 days. Fines are 25 cents per day per overdue book. However, students

may return materials up to three days late without having to pay any fines if no other patron has filed a request for the book. Fines are paid at the Cabell Library Circulation and Reserves Desk and Tompkins-McCaw Library Service Desk.

If a member of the VCU community loses his or her VCUCard, contact the VCUCard Office and Cabell Library Circulation and Reserves Desk or Tompkins-McCaw Library Service Desk immediately as the individual will be held responsible for materials checked out on his or her card.

The VCUCard contains a vending strip that may be used on machines in both libraries to add funds for photocopying and laser printing. Photocopies using the VCUCard vending strip cost eight cents each. Printing is nine cents per one-sided page or 15 cents per two-sided page. Microfilm and microfiche copies cost 10 cents each.

Specialized services. Among the many specialized services that VCU Libraries offers is the Government Documents section in Cabell Library, which contains a wide variety of federal, state and local publications, such as topographic maps, Congressional reports, and statistical monographs.

VCU Libraries is the only official U.S. Patent and Trademark Depository Library in Virginia.

Another specialized service is interlibrary loan, through which students may borrow materials or obtain photocopied articles from public and academic libraries throughout the United States.

The Media Resource Services units contain non-print materials such as videos, cassettes, microscopes, posters, filmstrips, music scores and multimedia. Cabell Library Media Resource Services houses materials to support Academic Campus curricula. Tompkins-McCaw Library Media Resources contains materials for all the health sciences programs. The Periodicals/Microforms rooms in each library contain current issues of magazines, journals and newspapers. These resource materials cannot be checked out, but they may be used within the Periodicals/Microforms Room at Cabell Library and on the basement level of Tompkins-McCaw Library. For titles that are retained in microform, both libraries have microfilm readers and reader/printers; staff members at the

Periodicals Service desks are available to assist with operating this equipment. Many more titles are available electronically from the library's Web site.

VCU Libraries maintains reserve collections to provide VCU students, faculty and staff access to course readings and other materials. An ID is required to use the reserve collections. Loan periods for reserve materials are two hours, one day or three days. Reserve collections are located at the Circulation and Reserves Desk and in Media Resource Services in Cabell Library and at the Service Desk in Tompkins-McCaw Library.

Special Collections and Archives includes rare books, manuscripts by Virginia authors, medical artifacts, papers of prominent Richmonders and materials related to VCU history.

VCU Libraries is a member of the AIDS Resource Center Services, Association of Southeastern Research Libraries, Center for Research Libraries, Coalition for Networked Information, National Network of Libraries of Medicine, Richmond Academic Library Consortium, Richmond Area Film/Video Cooperative, Scholarly Publishing and Academic Resources Coalition (SPARC), Southeastern/Atlantic Regional Medical Library Services, and the Virtual Library of Virginia (VIVA).

— — — [www.viva.lib.va.us](http://www.viva.lib.va.us)

## Intercollegiate Athletics

**Dr. Richard Sander**

Athletic Director

### Mission

The mission of the VCU Athletic Department is to complement and supplement the total educational program of the institution. The Athletic Department must provide positive learning experiences for all students and give each individual the opportunity to share in personal and group success. VCU athletics will provide students involvement in an activity that helps to develop unity by encouraging a common quest for all students, alumni, staff and friends of the university. The athletic program is committed to enriching the mental and physical capabilities of its student-athletes while developing and building a respected program that is competitive on

a national level in selected sports. The department also guarantees a quality program in the other sports that will create a basis for pride among the varied constituencies of the university.

### Programs and facilities

With new athletic facilities and upgraded programs, the intercollegiate athletic program at VCU continues to grow. More than 250 student-athletes participate in the 16 athletic programs sponsored by the university, and two new multimillion dollar facilities have been completed.

The most significant addition to the department's facilities is the Stuart C. Siegel Convocation and Recreation Center. The multipurpose facility is located on the northwest corner of West Broad and Harrison streets and comprises two components. The recreational component consists of over 34,000 square feet of space suitable for a variety of activities, including weight and fitness training, basketball, volleyball and aerobics, as well as locker rooms, showers, equipment, a lounge and food service. The ALLTEL Pavilion component has over 155,000 square feet of multipurpose space, including six basketball courts for daily recreational use and practice for athletes, permanent and retractable seating, locker rooms, study areas, team lounges, concessions and administrative office space.

In addition to the Seigel Center, VCU manages and operates the Sports Backers Stadium, a track and soccer complex adjacent to the Diamond. The complex features a grass soccer field and an eight-lane synthetic track. The Thalheimer Tennis Center, with its air-supported roof, and the Cary Street Field's artificial turf surface provide student-athletes with some of the most modern athletic facilities in the state.

VCU's teams compete in the NCAA's Division I, the highest level of intercollegiate competition. Athletic teams for men include basketball, baseball, cross country, golf, soccer, tennis, and indoor and outdoor track and field. Women's teams include basketball, cross country, field hockey, soccer, tennis, volleyball, and indoor and outdoor track and field.

All full-time undergraduate students enrolled at VCU are eligible to compete, subject to the rules and regulations governing intercollegiate competition. Students interested in a specific sport



should contact the coach through the Department of Athletics, Franklin Street Gymnasium, 819 W. Franklin St., P.O. Box 842003, Richmond, VA 23284-2003, (804) 828-4000.

### Office of Student-athlete Advising

All student-athletes have two advisers, one within the Office of Student-athlete Advising and one within the student-athlete's major. Each team is assigned an Office of Student-Athlete Advising adviser who will coordinate academic and personal advising for the team. The adviser will assist the student-athlete in meeting requirements for academic progress and athletic eligibility consistent with VCU's policies and NCAA rules and regulations. Services offered to student-athletes include tutorial assistance, study skills instruction, academic monitoring and academic planning. The computer lab in the Office of Student-Athlete Advising is an additional resource for students on varsity teams. All VCU student-athletes participate in the NCAA Life Skills program.

### Recreational Sports

A variety of facilities, services and programs provided for the VCU community are coordinated by the Recreational Sports staff. For information, see "Recreational Sports" in Part IV of this bulletin or visit the Web site.

— — — [www.students.vcu.edu/recsports/](http://www.students.vcu.edu/recsports/)

### Services for Students with Disabilities

Virginia Commonwealth University is committed to providing students with disabilities an equal opportunity to benefit from all programs, services and activities. VCU complies with the requirements of the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973.

The university does not discriminate against qualified students with disabilities in admissions or program accessibility. Offices of Services for Students with Disabilities determine appropriate academic adjustments such as program and exam modifications, classroom accommodations and auxiliary aids. Students with disabilities are responsible for self-identi-

fication prior to requesting services and may do so at any time by contacting their campus coordinator and presenting documentation.

### Academic Campus

#### Dr. Shyla Ipsen

Coordinator (1984)

B.S. 1960 University of Wisconsin

M.Ed. 1975 Virginia Commonwealth University

Ph.D. 1994 Virginia Commonwealth University

The Office of Services for Students with Disabilities, Academic Campus, is located in the Education Annex, 109 N. Harrison St., P.O. Box 842500, Richmond, VA 23284-2500. Telephone (804) 828-ABLE (V/TDD), fax (804) 828-1944 or e-mail with any questions or concerns [sipsen@saturn.vcu.edu](mailto:sipsen@saturn.vcu.edu).

### MCV Campus

#### Donald G. Roebuck

Coordinator

The Office of Services for Students with Disabilities, MCV Campus, is located in the VMI Building, 1000 E. Marshall St., Room 301, P.O. Box 980124, Richmond, VA 23298-0124. Call (804) 828-9782 or (804) 828-4608 TDD, fax (804) 828-4609, or e-mail with any questions or concerns [dgroebuc@vcu.edu](mailto:dgroebuc@vcu.edu).

### Equal Employment Opportunity/Affirmative Action Services

Virginia Commonwealth University is committed to a policy of equal opportunity in education and employment. The Office of EEO/AA Services develops, implements and enforces policies which ensure equal opportunity to all programs, activities and services by members of the university community. Administrators, faculty members, staff and students may contact the Office to seek advice or pursue the filing of a complaint of discrimination on the basis of race, age, color, gender, national origin, religion, sexual orientation, veterans' status, political affiliation or disability. The Office of EEO/AA Services is located at 901 W. Franklin St., Room 114; telephone: (804) 828-1347; TTY: (804) 828-1420.

### Sexual harassment

The Office of EEO/AA Services also administers the university's Guidelines on the Prohibition of Sexual Harassment, providing guidance, prevention training and investigation of complaints. Copies of the current policy and Fact Sheet are available upon request. Individuals who feel they have been harassed or who seek information should contact the office at (804) 828-1347; TTY: (804) 828-1420 or visit 901 W. Franklin St., Room 114.

Students who feel they have been harassed by other students should contact the associate vice provost in the Division of Student Affairs to obtain a copy of the Student Sexual Misconduct Policy. The Academic Campus office is located at 901 Floyd Ave, telephone (804) 828-8940. The MCV Campus office is located at Bear Hall, telephone: (804) 828-0525.

### The Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973

Virginia Commonwealth University is committed to a policy of equal opportunity and non-discrimination in education and employment and compliance with the requirements of the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973. Available publications and information can be obtained from the university ADA Coordinator, located at 901 W. Franklin St., Room 114; telephone: (804) 828-1347; TTY: (804) 828-1420.

Individuals who have identified themselves as students with disabilities should contact the appropriate Coordinator of Services for Students with Disabilities:

#### Academic Campus

Voice/TTY: (804) 828-2253

#### MCV Campus

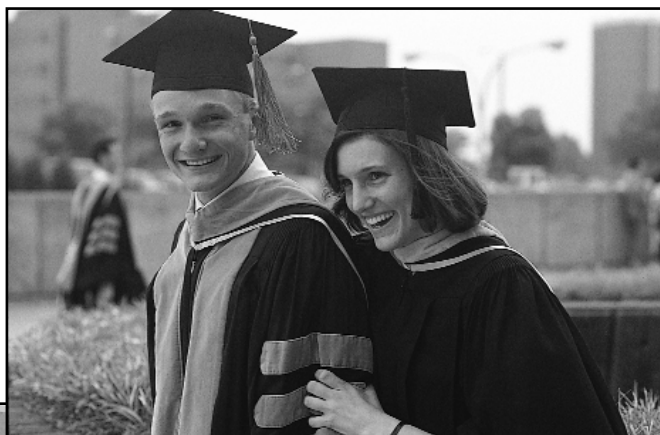
Phone: (804) 828-9782

TTY: (804) 828-4608



# Academic Regulations and General Degree Requirements

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**VCU strongly believes in offering the best quality of education to its students. With this devotion to quality, the university has developed academic regulations that promote excellence in learning and teaching as well an open level of communication between students and administration. These regulations offer students the guidance and direction they may need to achieve their goals as a scholar, a professional and an individual.**

**Office of Academic Affairs**

901 W. Franklin St. • P.O. Box 842527  
 Richmond, VA 23284-2527  
 (804) 828-1345 • Fax (804) 828-1887  
[www.vcu.edu/provost](http://www.vcu.edu/provost)

**Academic Success Center**

109 N. Harrison St. • P.O. Box 842500  
 Richmond, VA 23284-2500  
 (804) 828-1650 • Fax (804) 828-3397  
[www.students.vcu.edu/success/asc.html](http://www.students.vcu.edu/success/asc.html)

**Advising program**

**Students are responsible for knowing and fulfilling all general and specific degree requirements as described in this section.**

Individual student advising is an integral part of the VCU student's academic program. Each degree-seeking student is assigned a faculty adviser who is available for academic and career advising. Special (nondegree-seeking students) should contact the College of Humanities and Sciences' Special Student Advising Office at 310 N. Shafer St. Students also are encouraged to seek advising, depending on intended major, from the appropriate office listed in Part II of this bulletin.

Additional assistance for all students is available from the Counseling Center and the University Career Center.

**Address**

**Every VCU student is responsible for keeping a current mailing address on file with the Office of Records and Registration.**

**Mailings returned to this office by the U.S. Post Office because of an incorrect address may result in a registration hold on a student's record until the correct address is provided.**

**Attendance regulations**

The instructional program at VCU is based upon a series of class meetings involving lectures, discussions, field experiences, special readings, and reporting assignments. Therefore, it is important for each student to be in attendance on a regular basis. A student who misses a class session is responsible for completing all material covered or assignments made during the absence.

Instructors must clearly inform the student in writing of the attendance

requirements for each course and the corresponding consequences of poor attendance. Though the attendance requirements may vary widely from one course to another, students must abide by these requirements. Students cannot enroll in two courses that meet concurrently without written approval from the chair of each department involved.

Students having attendance problems should contact the instructor to explain the reasons for nonattendance, and to discuss the feasibility of continuing in the course. If the student has fallen so far behind that the successful completion of the course is impossible, the student should withdraw from the course before the end of the first eight weeks of classes.

If the student continues to miss class and does not officially withdraw from the course, the instructor may withdraw the student for nonattendance with a mark of "W" before the end of the first eight weeks of classes, or may assign an academic grade. Withdrawals are not permitted after the end of the first eight weeks of classes. For classes that do not conform to the semester calendar, the final withdrawal date occurs when one-half of the course has been completed. Withdrawal dates for summer session classes are published in the Summer Schedule of Classes.

**Religious observances**

It is the policy of VCU to accord students, on an individual basis, the opportunity to observe their traditional religious holidays. Students desiring to observe a religious holiday of special importance must provide advance written notification to each instructor by the end of the second week of classes. Instructors are encouraged to avoid scheduling on these dates one-time only activities which cannot be replicated. Faculty members are expected to make reasonable accommodations to students who are absent because of religious observance through such strategies as providing alternative assignments or examinations or granting permission for audio or video recordings and the like.

**Student conduct in the classroom**

The instructional program at VCU is based upon the premise that students

enrolled in a class are entitled to receive instruction free from interference by other students. Accordingly, in classrooms, laboratories, studies and other learning areas, students are expected to conduct themselves in an orderly and cooperative manner so that the faculty member can proceed with customary instruction. Faculty members (including graduate teaching assistants) may set reasonable standards for classroom behavior in order to serve these objectives. If a student believes that the behavior of another student is disruptive, the instructor should be informed.

If a faculty member believes that a student's behavior is disrupting the class and interfering with normal instruction, the faculty member may direct the student to leave the class for the remainder of the class period. In such circumstances, the faculty member is the sole judge that the student's behavior is sufficiently disruptive to warrant a temporary dismissal from the classroom. Disruptive behavior on the part of the student may result in the filing of formal charges under the University's Rules and Procedures document.

**Change of major**

Students who wish to change their majors must file a Change of Major Form. These forms are available at the Student Services Center in Founders Hall. The change of major becomes official after the Office of Records and Registration has received the form signed by the dean or chairperson of the appropriate school or department. A change of major should not occur for current semesters after the "add-drop" period.

Before initiating a change of major, students should carefully review the requirements and prerequisites of the program they wish to enter. In certain programs — including those in the schools of the Arts, Business, Education, Mass Communications and nontraditional studies — a candidate must fulfill additional requirements before being accepted as a degree-seeking student.

Students currently enrolled in an MCV Campus program who wish to change to a curriculum on the Academic Campus must file a Change of Major Form. Such students are subject to the continuance policy of the

Academic Campus after the major has been changed. Students currently enrolled in an MCV Campus program who wish to change to another MCV Campus curriculum must go through the admission process outlined in Part II of this bulletin.

Credits previously earned at VCU or at another university, may or may not be applicable to the new major.

## Classification of students

### Academic programs

Full-time and part-time degree-seeking students, but not nondegree-seeking students, are classified by credits earned as follows:

Freshmen	1 to 23 credits
Sophomores	24 to 53 credits
Juniors	54 to 84 credits
Seniors	85 credits and more

### Health Science Programs

Classification is determined by curriculum requirements for individual programs.

### Continuous enrollment

A student who does not attend VCU for four or more successive semesters including summer sessions, must submit an application for readmission to the Office of Admissions. This application must be filed before the suggested deadline date for submitting readmission applications for the semester in which the student wishes to return to VCU. For health science programs, breaks in enrollment must be approved by the department.

## General course information

### Course numbering system

All schools and programs within VCU use the following course numbering system. All course numbers consist of three digits (XXX). The first digit relates to the course level as follows:

#### 0XX Noncredit courses

Such courses are offered for students to make up deficiencies in previous training or to improve certain basic skills prior to full-time enrollment in undergraduate credit courses.

#### 1XX and 2XX Undergraduate, lower level

Courses with these numbers are offered primarily for undergraduate students and may not be used for graduate credit,

although graduate students may be required to register for courses at this level to gain a necessary foundation for other course work.

#### 3XX and 4XX Undergraduate, upper level

Courses offered for advanced undergraduates and usually constitute the major portion of specific program work leading to the baccalaureate degree. On occasion, students will be advised by their graduate advisers to enroll in a 4XX course.

#### 5XX Introductory graduate courses

Graduate students enroll for credit in these courses through the normal graduate advising system. Departments may limit the number of 500-level courses applicable to a graduate degree program. Advanced undergraduates may enroll in these courses for credit with consent of the offering department. Credit is applicable toward only one degree.

First year, first professional (medicine, pharmacy and Dentistry). Courses normally open to students enroll in the M.D., Pharm.D. and D.D.S. programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

#### 6XX, 7XX and 8XX Graduate courses

Graduate students enroll for credit in these courses through the normal graduate advising system.

6XX Second year, first professional (medicine, dentistry, and pharmacy). Courses normally open only to students enrolled in the M.D., D.D.S., and Pharm.D. programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

7XX Third and fourth year, first professional (medicine, dentistry, and pharmacy). Courses normally open only to students enrolled in the M.D., D.D.S., and Pharm.D. programs. Certain courses of this group may be designated by the department and approved by the Graduate Council for graduate credit.

### Course interpretation

A single number listing for a course, such as HIST 101, indicates it is a one-semester course and may be offered each semester or only one semester each year.

Courses listed with a double number, such as HIST 201, 202 and designated as semester courses, consist of two one-semester courses either of which may be taken without the other.

Courses listed with a double number, such as CHEM 101-102 and designated as a continuous course, consist of two one-semester courses, the first of which can be taken without the second, but the second of which cannot be taken without the successful completion of the first.

The university reserves the right to withdraw any course or program.

### Course abbreviations

Abbrev.	Description
ACCT	Accounting

ADLT	Adult Education
ADMS	Administration and Supervision
AFAM	African-American Studies
ALHP	Allied Health Professions
AMST	American Studies
ANAT	Anatomy
ANTH	Anthropology
APPM	Applied Music
ARTE	Art Education
ARTF	Art Foundation
ARTH	Art History
ARTS	Arts
BIOC	Biochemistry and Molecular Biophysics
BIOL	Biology
BIOS	Biostatistics
CARD	Communication Arts and Design
CHEM	Chemistry
CHIN	Chinese
CLED	Counselor Education
CLLS	Clinical Laboratory Sciences
CLRS	Clinical Radiation Sciences
CMLI	Comparative Literature
CMSC	Computer Science
COOP	Cooperative Education
CRAF	Crafts
CRJS	Criminal Justice
DANC	Dance and Choreography
DENH	Dental Hygiene
DENS	Dental Special Topics
DESI	Design
DOMX	Domestic Exchange Program
ECON	Economics
ECSE	Early Childhood Special Education
EDUS	Educational Studies
EGRB	Biomedical Engineering
EGRC	Chemical Engineering
EGRE	Electrical Engineering
EGRM	Mechanical Engineering
EMOD	Emotional Disturbance
ENDO	Endodontics
ENED	English/English Education
ENGL	English
ENGR	Engineering
ENLP	English Language Program
ENVS	Environmental Studies
ESCI	Earth Science
EUCU	European Cultures
FASH	Fashion Design and Merchandising
FELL	Fellowship
FIRE	Finance, Insurance and Real Estate
FLET	Foreign Literature in English Translation
FMBA	Fast Track MBA
FREN	French
FRLG	Foreign Languages
GDED	Graduate Dental Education
GEDE	General Dentistry
GENP	General Practice
GEOG	Geography
GMED	Graduate Medical Education
GRAD	Graduate Studies
GRMN	German
GRTY	Gerontology

HADE	Health Administration/Executive
HADM	Health Administration
HCMG	Health Care Management
HGEN	Human Genetics
HIST	History
HLTH	Health Education
HONR	University Honors Program
HUMS	Humanities and Sciences
HUSI	Humanities and Sciences Interdisciplinary
IDDS	Interdisciplinary Developmental Disability Studies
IDES	Interior Design
INDH	Industrial Hygiene
INFO	Information Systems
INSC	Interdisciplinary Science
INTL	International Studies
ITAL	Italian
LASK	Language Skills
LATN	Latin
LING	Linguistics
MASC	Mass Communications
MATH	Mathematics
MEDC	Medicinal Chemistry
MEDI	Medicine
MGMT	Management
MHIS	Music History, Literature and Theory
MICR	Microbiology and Immunology
MILS	Military Science
MNRT	Mental Retardation
MRBL	Marketing and Business Law
MUED	Music Education
MUSC	Music Composition
NEUS	Neurosciences
NRSA	Nurse Anesthesia
NURS	Nursing
OCCT	Occupational Therapy
ORPT	Oral Pathology
ORSG	Oral Surgery
ORTH	Orthodontics
PADM	Public Administration
PAPR	Painting and Printmaking
PATC	Patient Counseling
PATH	Pathology
PCEU	Pharmaceutics
PEDD	Pediatric Dentistry
PERI	Periodontics
PHAR	Pharmacy
PHED	Physical Education
PHIL	Philosophy
PHIS	Physiology
PHTO	Photography and Film
PHTY	Physical Therapy
PHTX	Pharmacology and Toxicology
PHYS	Physics
PMCH	Preventive Medicine and Community Health
POLI	Political Science
PORT	Portuguese
PPAD	Public Policy and Administration
PROS	Prosthodontics
PSYC	Psychology
RDSS	Reading and Study Skills
READ	Reading
RECR	Recreation

RELS	Religious Studies
RHAB	Rehabilitation Counseling
RUSS	Russian
SCPT	Sculpture
SELD	Special Education — Learning Disabilities
SLWK	Social Work
SOCs	Social Sciences
SOCY	Sociology
SPAN	Spanish
SPCH	Speech
STAT	Statistics
STUA	Study Abroad Programs
SWKD	Social Work-Doctorate
TEDU	Teacher Education
THEA	Theatre
UNVS	University Studies
URSP	Urban Studies and Planning
VCU1	Academic Affairs
WMNS	Women's Studies

## Registration policies

### Student load

Student load is the total number of credits for which a student is enrolled in any one semester. The semester credit is the quantitative unit by which courses are measured. A semester credit is defined as one hour per week of lecture/recitation/computer-assisted instruction or not less than two hours per week of laboratory work, field work, internship, or studio work throughout the semester. MATH 001, ENGL 001, and ENGL 002 are each equivalent to three semester hours, but none carries academic credit.

### Full-time and part-time students

A student enrolled in 12 credits or more during any fall or spring semester is classified as full time (nine credits or more for a student in a professional program). A student enrolled in 11 credits or less during any semester is classified as part time. Both full-time and part-time students may seek degrees at VCU. However, some curricula may require full-time status. For more information, see the “Categories of Student Enrollment” section in Part II of this bulletin.

### Overload

A degree-seeking undergraduate student may take no more than 19 credits per semester without special permission. This maximum load excludes holiday intersession courses. More than 19 credits per semester constitutes an overload. Health science curricula

requiring more than 19 credits per semester are exempt from this rule.

The student's adviser and academic dean may permit a student to attempt up to 21 credits per semester, but no student may attempt more than 21 credits in any one semester. An Overload Approval Form may be obtained from the Student Services Centers in Founders Hall and Sanger Hall.

Undergraduate special nondegree-seeking students may take no more than 11 credits per semester. Overloads for special nondegree-seeking students must be approved by the Academic Regulations Appeals Committee.

For information about credits earned concurrently at another institution, see the “Concurrent Registration” section.

### Audit registration

For information on registration for audit see the section under the headline “Mark of Audit.”

### Concurrent registration

Students enrolled in degree programs need prior approval to take courses at other institutions to ensure credits earned concurrently at another institution are accepted for transfer at VCU. Before registration at the other institution, the student needs approval by his or her adviser, department chair, and academic dean. A Request to Take Courses at Another Institution form can be obtained from the Student Services Center, Office of Records and Registration or from the Office of the Dean.

### Change in registration

Once a student has registered for classes, changes in registration must be made according to the procedures listed below. Whenever a student makes any change in registration, the student should keep a copy of the new schedule as verification of the change. Changes in registration may affect financial aid. Students are advised to consult with a financial aid counselor before making any changes to their enrollment status. See Part III of this bulletin for detailed information on financial aid.

### Cancellation of registration

To cancel registration a student must notify, in writing, the Office of Records and Registration before the end of the

"Add-Drop" period, or drop all classes using the Telephone Registration System. Refunds are issued in accordance with procedures described under the refunds section in Part III of this bulletin. For readmission guidelines, consult Part II of this bulletin.

### Withdrawal from the university

Students enrolled in health science programs should refer to school guidelines. Withdrawal may affect continuance in health science curricula.

Students who withdraw from all classes during a semester must notify, in writing, the Office of Records and Registration before the end of the first eight weeks of classes, or if applicable, withdraw from all classes using the Telephone Registration System by the end of the first eight weeks of classes. Failure to notify the Office of Records and Registration of intention to withdraw from all classes, or to withdraw from all classes using the Telephone Registration System can result in the assignment of failing grades in all or some of the courses. The final withdrawal date for classes whose meeting dates do not conform with the semester calendar is the day when one-half of the course has been completed. Withdrawal forms are available at the Student Services Centers in Founders Hall and Sanger Hall. Failure to complete this form may result in failing grades in all or some of the courses.

A mark of "W" for withdrawn will appear on the student's permanent academic record for all courses. Charges are assessed and adjusted according to the University Refund Policy. See "Refunds" in Part III of this bulletin.

When extraordinary circumstances require that a student requests retroactive withdrawal after the final withdrawal date, the student must petition the Academic Regulations Appeals Committee for consideration of a waiver of this academic regulation. For further information, see the "Waiver of Academic Regulations, Academic Regulations Appeals Committee."

Academic Campus students who withdraw from all courses during a semester may attend the following semester without submitting an application for readmission. **MCV Campus students should consult their program adviser prior to any withdrawals for academic or health-related reasons.**

A student who does not attend VCU for four or more successive semesters,

including the summer, must submit an application for readmission to the Office of Admissions. This application must be done before the suggested deadline date for submitting readmission applications for the semester in which the student wishes to return.

Also see "Cancellation of Registration" section.

### During the add/drop period

Exact dates for add/drop periods before and during the first week of classes are listed in the Schedule of Classes booklet each semester. Changes in registration (drops, adds, changes from audit to credit) during the add/drop periods can be made by completing a Course Request Form and submitting it to the Student Services Centers in Founders Hall or Sanger Hall. Courses dropped during add/drop periods do not show on a student's permanent record.

### After the add/drop period

Students cannot add a course after the add/drop period, except under unusual circumstances and with the permission of the dean of the school offering the course. The calendar in the front of this bulletin lists the date when add/drop ends.

Drops are not permitted after the add/drop period has ended. However, students may withdraw from classes in accordance with prescribed procedures. To officially withdraw from a class, a student must obtain and file the appropriate form with the Office of Records and Registration.

If a student stops attending a class and fails to withdraw, a failing grade is usually given for that course. Withdrawals become a part of the student's academic record with a mark of "W." In classes that do not conform to the normal semester calendar, the final withdrawal date is when one-half of the course is completed.

For further information see the "Withdrawal from the University" section. Students who withdraw from a course may be entitled to a refund. See "Refunds" in Part III of this bulletin.

## Grading and marking system

### Evaluation and final grade reports

Students are encouraged to discuss their progress in courses with their

instructors, especially before the withdrawal deadline.

University policy requires faculty to provide students with feedback about their academic performance before the semester or class withdrawal date. Although such feedback does not always take the form of a letter grade, grades do provide a clear indication of class progress.

Final grade reports are sent to students at the end of each semester. Grade reports are mailed to the official mailing address on file in the Office of Records and Registration. Students must submit in writing any change of address to the Office of Records and Registration, 827 W. Franklin St., P.O. Box 842520, Richmond, VA 23284-2520 or the Student Services Centers in Founders Hall or Sanger Hall.

### Grades and grade points

VCU course work is measured both in terms of quantity (semester hours of credit) and quality (grades). Grades are assigned according to a letter system. Each letter is assigned a grade-point value. These letter grades and their respective meaning and grade-point values follow:

Grade letters and meaning	Grade-point values per semester credit
A	4.0
B	3.0
C	2.0
D	1.0
F	0.0
AU = Audit	—
CO = Continued	—
CR = Credit	—
H = Honors	—
HP = High Pass	—
I = Incomplete	—
IM = Incomplete Military	—
M = Marginal	—
NC = Administrative grade with no credit	—
NR/NG = Administrative grade assigned when no grade is submitted by the instructor	—
P = Pass	—
PR = Progress	—
W = Withdrawn	—
WM = Withdraw Military	—
RD = Repeated course; "D" grade excluded from cumulative GPA	—
RF = Repeated course; "F" grade excluded from cumulative GPA	—

Grades designated by a blank, ( ), in the grade-point column are not

considered in the computation of hours attempted, hours earned, grade-points earned or GPA.

The above scale is known as a four-point grading system since 4.0 is the highest grade-point assigned. The number of grade-points earned is computed by multiplying the grade-point value for the letter grade times the number of semester credits for the course. For example, a student who receives an "A" (four grade-points) in a three-credit course earns 12 grade-points.

The notation (#), when following a letter grade, means that letter grade is not computed in the GPA. The notation (%), when following a letter grade, is assigned by the Honor Council and is computed in the GPA. When a grade of "F" is followed by an asterisk (\*), the mark of "I" was changed to "F" for failure to complete the course work in the allotted time frame.

#### **Mark of audit (AU)**

Class size permitting, a student may register for a course on an audit basis. A student may register for audit only during add/drop and late registration periods as a new registration and not as a change from credit to audit. Auditing a course means a student enrolls in a course but does not receive academic credit upon completion of the course. A student who registers on an audit basis is subject to attendance regulations of that class and may be administratively withdrawn by an instructor for a violation of class requirements for audit students, before or after the normal eight week withdrawal deadline. A student who registers for audit may be subject to other course requirements at the discretion of the instructor. Audit students are charged the regular rate of tuition and fees. An audit course is counted as part of the student's semester load.

#### **Mark of continued (CO)**

The mark of "CO" may be assigned as an interim mark for those courses which run over several grade reporting periods. The "CO" mark indicates the course is not expected to be completed in a single semester and that the student must reregister for the course in the following semester. Upon departmental notification "CO" marks for courses not reregistered for in the following semester are converted to "F" grades. Upon completion of the course,

a final grade is assigned for that semester and the previous "CO" mark(s) remain. This mark may be assigned only in courses approved for such grading.

#### **Mark of credit (CR)**

Courses assigned the "Credit" grade will not be computed into the GPA.

#### **Mark of honors (H)**

Courses assigned the "Honors" grade will not be computed into the GPA.

#### **Mark of high pass (HP)**

Courses assigned the "High Pass" grade will not be computed into the GPA.

#### **Mark of incomplete (I)**

When circumstances beyond a student's control prevent the student from meeting course requirements at the end of the semester, the student may request the instructor to assign the mark of "I" for that semester. If in agreement with this request, the instructor fills out an Incomplete Grade Assignment Form bearing the student's signature. This form is then submitted with the grade sheet for that course by the faculty member. A grade cannot be changed to "I" after the deadline for grade submissions.

The time limit for submission of all course work necessary for removal of an "I" given during the fall semester is 30 calendar days after the beginning of the following spring semester. For "I" grades given during the spring semester or summer session, all course work must be submitted within 30 days after the beginning of the following fall semester. For programs leading to the M.D., D.D.S., or Pharm.D. degrees, contact the appropriate dean's office for the maximum time limit allowed.

These deadlines may be extended if the student requests that extension in writing and is granted approval by the instructor and the dean of the school in which the course was offered.

Upon expiration of the deadline, an incomplete that has not been changed to a grade is automatically changed to an "F."

#### **Mark of marginal (M)**

Courses assigned the "Marginal" grade will not be computed into the GPA.

#### **Mark of pass (P)**

The mark of "P" may be assigned only in courses approved for such grading. This grade denotes satisfactory completion of course requirements. If course requirements are not met satisfactorily, a grade of "F" is assigned. Courses assigned the grade of "P" are not computed in the GPA. However, courses assigned the grade of "F" are computed in the GPA.

#### **Mark of progress (PR)**

A "PR" is assigned as an interim grade for certain continuing course requirements which run over the grade reporting periods. The mark of "PR" may be assigned only in courses approved for such grading. Unlike the mark of "I," "PR" will not automatically be changed to a failing grade at the end of the succeeding semester.

#### **Mark of withdrawn (W)**

The mark of "W" indicates the student has officially withdrawn from the course or has been withdrawn for nonattendance. The last day to withdraw for the fall and spring semesters is the end of the eighth week of classes. Summer session students should check the Summer Schedule of Classes for withdrawal dates.

For further information see the "Withdrawal From the University" section.

#### **GPA**

The GPA is computed by dividing the number of grade-points earned at VCU by the number of credits attempted at VCU. **The grades of accepted transfer courses are not included in the computation of the VCU GPA.**

#### **Repeated courses**

Because some health science programs do not allow students to repeat courses, any student planning to do so must first consult with his or her adviser, program director or department chair.

The semester credits attempted and the grade-points earned for all attempts are included in computing the cumulative GPA. No matter how often a course is repeated, it may be counted only once as credits presented toward graduation.

Courses attempted on the Academic Campus can be repeated. All credits



attempted and grade-points earned are included in the computation of the cumulative GPA with one exception, which applies only to students enrolled in programs on the Academic Campus.

If a student repeats a course in which a "D" or "F" was earned on the first attempt, the student may request at the time of registration that only the better grade be counted in computing the cumulative GPA. The grade is not excluded until the request is made. If, however, more than one "D" or "F" grade is received in the same course, only one of these grades will be removed from the computation of the cumulative GPA.

**A student can file the Repeated Course Request Form at any time during a semester prior to the awarding of the undergraduate degree. This form must be filed before the last week of classes in any semester so the cumulative GPA can be adjusted at the end of that semester.**

Grades for all attempted courses remain on the student's permanent record. Students may not repeat courses for which they have previously received transfer credit without losing the transfer credit. A repeated course may be counted only once toward credits necessary for graduation. Before repeating a course, the student should consult with the adviser or department chair.

**Students who choose to repeat a course must do so before the awarding of their undergraduate degrees from any school or college at VCU or from any other college or university. The student's GPA at graduation will not be affected by repeating a course at any time after graduation.**

### **Grade exclusion policy**

This policy is applicable to former students enrolled in programs on the Academic Campus who have been separated completely from VCU for five years or more; are now entering an Academic Campus program; and who earn at least a 2.0 GPA on the first 12 semester hours completed.

Under this policy, eligible students may request "D" and "F" grades previously earned at VCU be excluded from their total credits earned and GPA computation for the purpose of meeting

scholastic continuance and graduation requirements.

All earned grades, including those excluded "D" and "F" grades, remain on the student's permanent academic record. Excluded grades must be approved by the student's major department chair and by the dean of the school. The grade exclusion policy may be used only once during a student's enrollment at VCU and cannot be revoked by the student after approval is granted. A student who chooses to use this policy must do so before the awarding of his or her undergraduate degree.

### **Change of grade**

A final grade may be corrected by the faculty member with proper submission of the Change of Grade Form to the chair of the department in which the course was taught. The chair will forward the form to the school's dean who will send it to the Office of Records and Registration. For grades awarded in the fall semester, the change of grade must be submitted by the department chair no later than 30 calendar days after the beginning of the following spring semester. For grades awarded in the spring semester or summer, the change must be submitted no later than 30 days after the beginning of the following fall semester. However, a change of grade that affects the student's academic eligibility to enroll must be made during the first week of classes in the semester or summer session in which the student plans to continue attendance.

### **Grade review procedure**

If a student feels a grade is inaccurate, he or she should discuss the grade with the faculty member who assigned it. This allows the faculty member to explain how the final grade was determined. If an error is detected, the faculty member can submit a change of grade.

If no agreement is reached and the student still feels the grade was unfairly assigned, the student can submit a written appeal to the chair of the department in which the course was taught. For grades awarded in the fall semester, the change of grade appeal must be submitted to the department chair no later than 14 days after the beginning of the following spring semester. For grades awarded in the spring semester or summer session, the appeal must be submitted no later

than 14 days after the beginning of the following fall semester.

The burden of proof falls upon the student and the written appeal should state and support, with available evidence, the reasons why the student believes the grade should be changed. The chair of the department will attempt to mediate an amicable solution within two weeks of receipt of the written appeal. If the complaint is unresolved, the chair will forward the student's appeal, together with the chair's recommendation, to the dean of the school in which the course was taught.

The dean then forms a Grade Review Committee composed of a nonvoting faculty chair, two faculty members, and two students. The committee reviews all written materials and records and then arranges for a hearing unless the appeal is judged patently without merit. At the hearing, the committee hears evidence and testimony from all parties. The committee has the option of either raising the grade or leaving the grade unchanged. However, a change of grade that affects the student's eligibility to enroll must be made during the first week of classes during the semester or summer session in which the student wishes to continue attendance.

The Grade Review Procedure is printed in full in the VCU Resource Guide and on the Web.

— — — [www.vcu.edu/safweb/rg/policies/](http://www.vcu.edu/safweb/rg/policies/)

### **Transcripts**

A transcript is a copy of the student's permanent academic record. All transcripts carry the University Seal. However, unofficial transcripts given directly to students are marked "issued to student" in red ink.

Transcripts of student academic records are issued by the Office of Records and Registration only upon the written request of the student. The request should be made at least one week before the transcript is needed. Unofficial copies of academic records for currently enrolled students can be obtained from kiosks located in Founders Hall, Sanger Hall, the Business Building and the Student Commons.

A transcript is issued only after the student has paid all university bills.

Transcript requests signed by the student may be submitted in person at the Student Services Center, Room 102 Founders Hall (Academic Campus), Room

1-055 Sanger Hall (MCV Campus) or by mail to the Office of Records and Registration, 827 W. Franklin St., P.O. Box 842520, Richmond, VA 23284-2520 (Academic Campus), Office of Records and Registration, 1101 E. Marshall St., P.O. Box 980277, Richmond, VA 23298-0277 (MCV Campus).

## Continuance in academic programs

### Academic campus programs

**Definition of good standing.** A student who has been admitted to VCU and is currently enrolled is in “good standing” until such time that the student is placed on academic warning, probation or suspension.

**Academic warning.** A student is placed on academic warning when the student’s GPA falls below 2.0 (grade “C”) at the conclusion of any semester of attendance — fall, spring or summer. Notification of warning appears on the student’s grade report. A student remains on academic warning for one term of attendance, at the end of which time the student must obtain a cumulative GPA of at least 2.0. Failure to achieve this GPA results in academic probation.

**Academic probation.** A student is placed on academic probation when the student’s cumulative GPA falls below 2.0 for two successive semesters of attendance.

A degree-seeking student on academic probation may not enroll in more than 12 credits per semester of attendance. Students on academic probation are expected to improve their cumulative GPA by achieving a semester GPA of 2.0 or better during each semester of attendance. A student who achieves a cumulative GPA of at least 2.0 is removed from academic probation.

**Academic suspension.** A student is placed on academic suspension when the student’s cumulative GPA is below 2.0 for two successive semesters and the following semester of attendance GPA falls below 2.0.

Notification of suspension appears on the student’s grade report and the student also receives a certified letter from the Office of Records and Registration stating the conditions of the suspension. A notation of the suspension is placed on the student’s permanent record. Academic suspension indicates

the student has a record of continued unsatisfactory progress.

**A student on academic suspension may not enroll at the university for two consecutive semesters, including the summer session.** Course work taken at another institution while the student is under academic suspension from VCU is considered part of the criteria for readmission, but the **course work is not used to increase the VCU cumulative GPA.** If the student is readmitted, the course work will be evaluated according to regular procedures.

A student may apply for readmission to VCU for the semester following completion of the suspension period. A student readmitted after suspension enrolls under the academic probation status and is subject to the provisions of that status. If a student readmitted after suspension fails to obtain a semester GPA of 2.0 in any semester before achieving a cumulative GPA of at least 2.0, the student receives a second, and final, suspension. The student may be considered for readmission after a minimum five-year separation from VCU.

For readmission guidelines, see Part II of this bulletin.

### MCV Campus programs

Warning, probation and suspension are defined by the program of study. Consult program adviser for further details.

### Termination of enrollment

The university reserves the right to terminate the enrollment of any student for unlawful, disorderly or immoral conduct, or for persistent failure to fulfill the purposes for which he or she was matriculated. Any students whose relations are so severed forfeit all rights and claims with respect to the institution.

In addition to dismissal for failure to comply with standards of conduct described in the Rules and Procedures of VCU and the VCU Honor Code, a student may be dismissed from the school in which he or she is enrolled for failure to meet academic requirements prescribed by his or her school or failure to exhibit the attitudes and skills deemed necessary to function within the chosen professional practice. VCU recognizes its responsibilities to the health professions and to the consumer of health services. Therefore, any action by a student considered to be unprofessional conduct according to the

code of ethics and the laws and regulations governing the student’s chosen profession, shall constitute cause for disciplinary action.

Unprofessional conduct includes, but is not limited to:

1. fraud or deceit in gaining admission to the university, i.e., false or obviously misleading representations on the admissions application,
2. an act that violates the established legal standards regarding conduct of one person towards society, i.e., stealing, lying, cheating, and slander, and
3. conviction of a felony involving moral turpitude.

The individual health science schools recognize and support the statements set forth by the licensing boards of the respective health professions as they relate to examination, licensure, and the practice of each profession. When applicable, these standards may be used in determining a student’s eligibility for continuance in or readmission to the university.

## Graduating with honors

### Dean’s list

The dean’s list is a recognition of superior academic performance. A student is automatically placed on the dean’s list for each semester in which a semester GPA of at least 3.5 is attained, based on a minimum of 12 semester credits excluding courses graded credit/noncredit with no grade below “C.” A notation is placed on the student’s permanent academic record. Students earning marks of “I” or “PR” are ineligible for the dean’s list for the semester in which these grades were earned.

### Graduation honors

Candidates for a baccalaureate degree who complete a minimum of 45 credits at VCU and are enrolled may qualify for graduation honors. Awarding of honors for both Academic and MCV Campus programs is based on the student’s cumulative GPA at the time of graduation. Cum Laude is awarded for a 3.30 to 3.59 GPA, Magna Cum Laude is awarded for a 3.60 to 3.89 GPA, and Summa Cum Laude is awarded for a 3.90 GPA or better.

Calculation of the GPA for honors determination is based on grades

received for all courses taken for credit at VCU, as well as for credits accepted for transfer at VCU. However, to qualify for graduation honors, a student's GPA for courses taken for credit at VCU must be at least as high as the minimum required for the specific honor bestowed. Recognition of graduation honors is made on the student's diploma, permanent record, and in the commencement bulletin.

### Degree requirements for all undergraduate students

The degree requirements that must be fulfilled by all degree-seeking students on the Academic Campus are listed below. For additional degree requirements, students must consult the school and major departmental sections of this bulletin. For Professional degree requirements, consult school sections of this bulletin.

In order for a student to be awarded a degree, he or she must resolve any outstanding charges owed to the university and must have satisfied and/or complied with the semesters of any sanctions or penalties imposed as a result of misconduct constituting violations of university policies or procedures occurring at any time prior to the awarding of the degree, certificate or other university recognition. The university does not guarantee the award of a degree or a certificate of satisfactory completion of any course of study or training program.

At any time following the award of a degree, certificate or other university recognition, the university reserves the right to take appropriate action, including, but not limited to, the revocation of such degree, certificate or other university recognition, on the basis of academic misconduct discovered subsequent to, but which occurred prior to, the award of the degree, certificate or other university recognition. More specifically, when an action that constitutes a violation of the VCU Honor System leads to a finding that invalidates a major piece of work required for a degree, certificate or other university recognition so that the validity of the degree, certificate or other university recognition is jeopardized, the student or former student will be subject to a sanction that may include (a) rejection of a thesis, dissertation or other work, (b) revocation of

a certification or other university recognition, or (c) revocation of a degree.

### GPA requirement

A cumulative GPA of 2.0 (grade "C") or better is required in order to receive a baccalaureate degree. Only credits taken at VCU are computed in the GPA.

Some programs may require a higher cumulative GPA. Students should consult the section of this bulletin that deals with their major for any GPA requirements above the university's 2.0 minimum.

### Total credits

The total number of semester credits required for graduation depends on the student's major. Specific information on total credit requirements is detailed under degree program descriptions in this bulletin, beginning with Part VII.

### Major concentration

To receive the baccalaureate degree, a student must attain a 2.0 GPA or better in all courses in the student's major presented for graduation. Only credits taken at VCU are computed in the GPA. Students should consult the appropriate section of this bulletin dealing with their majors for any GPA requirements above the 2.0 university minimum.

### Upper-level courses

A minimum of 45 credits is required in 300-500-level courses for a bachelor's degree; therefore, credits transferred from two-year institutions can not be used to fulfill this requirement.

### Last 25 percent rule

Degree candidates must complete the last 25 percent of the credit semester hours required for their bachelor's degree program at this institution.

This requirement does not apply to students who participate in VCU-sponsored programs abroad or who earn course credit at a cooperating university through VCU domestic and international university exchanges.

### Graduation application

Although VCU confers degrees in May, August and December, an annual commencement exercise is held only in May. Each student who expects to complete the degree requirements by the

end of a semester or summer session must file an application for the degree at the beginning of that semester.

Application request forms are available at the Student Services Center in Founders Hall for Academic Campus Students. MCV Campus students should contact their department for graduation applications. Degree applications must be submitted by the dates indicated in the calendar appearing in the front of this bulletin. A student needs to schedule a conference with the adviser well in advance of the deadline, and should remember that the application also requires approval by the department chair and dean.

### Special notes for graduating financial aid recipients

If a student plans to continue enrollment at VCU after graduation and want financial aid, he or she must apply and be accepted as a degree/certificate-seeking student and enroll at least half time to meet financial aid enrollment requirements.

If a student received federal loan funds during enrollment at VCU, he/she may be required to complete a loan exit counseling session as listed below. The student's diploma will not be released until he or she completes this required obligation.

#### Exit counseling required

Loan population	Contact point
Perkins Loans	
HPSL	VCU Accounts Receivable
NSL	327 W. Main St.
LDS	P.O. Box 843055
Primary Care	Richmond, VA 23284-3055
University	(804) 828-4538
Long Term	
	VCU Financial Aid
MCV Campus	1101 E. Marshall St.
	Room 1-055
all other loans	P.O. Box 980244
	Richmond, VA 23298-0244
	(804) 828-9800
	School of Dentistry
School of	Lyons Building
Dentistry	520 N. 12th St.
	Room 309
	P.O. Box 980566
	Richmond, VA 23298-0566
	(804) 828-9196
	School of Medicine

School of Medicine	Sanger Hall 1101 E. Marshall St., Room 1-003 PO Box 980565 Richmond, VA 23298-0565 (804) 828-4006
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#### Exit counseling optional

Loan population	Contact point
Federal Direct Loan	VCU Financial Aid 901 W. Franklin St. PO Box 843026 Richmond, VA 23284-3026 (804) 828-6669
Federal Stafford Loan	

### Commencement participation policy

---

MCV Campus graduation candidates for degrees to be conferred at the close of the spring semester must be present to receive their degrees unless excused by the deans of their schools. No individual may be exempt from this regulation.

When a student has submitted a degree application for spring graduation but does not meet degree requirements due to extenuating circumstances, the student's dean may permit the student to participate in commencement exercises. Permission may be granted only when six or fewer credit hours are lacking for degree completion and the student demonstrates his or her intent to complete the needed credits by the end of the summer session.

When such an exception is made, the dean confirms the following conditions to the student:

- Participation in the commencement ceremonies does not mean the student has been awarded a degree.
- The degree will not be awarded until all degree requirements have been met and the student has satisfied all financial obligations to VCU.
- The exemption is made only to accommodate the student's request and does not obligate VCU to ultimately grant a degree unless all requirements and conditions have been met.

### Degree options

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#### Second baccalaureate degree

A student who already has earned a baccalaureate degree and wishes to earn a second baccalaureate degree at

VCU needs to complete an Application for Undergraduate Admission. This form is available at the Office of Undergraduate Admissions and should be submitted, after completion, to that office.

Students accepted are referred to the dean's office of the school offering their intended major. The dean's office evaluates the student's academic record and prepares a statement of advanced standing that lists transferable credits to the second degree program.

A student seeking a second undergraduate degree from VCU must earn a minimum of 30 additional credits at VCU and also must satisfy any supplementary requirements of the department or school granting the degree.

#### Double major

A double major is the concurrent fulfillment of the requirements of two majors. To earn a degree with two majors, the student must complete the courses required in each major, any collateral/prerequisites courses required for both majors, and the General Education requirements of the primary major.

The primary major is the major which appears on the transcript as the degree awarded and the second major will appear as an accompanying note. One diploma is awarded, and a notation recognizing the completion of the double major is posted on the student's permanent academic record.

To initiate a double major, a student should obtain the necessary form and instructions from the Student Services Centers in Founders Hall or Sanger Hall.

#### Dual degrees

Dual degrees are the concurrent fulfillment of the requirements of two majors and two degrees. To earn dual degrees, the student must fulfill all the requirements of the degree programs in both majors. The student must complete an additional 25 percent of hours above the minimum hour requirement of the major requiring the most credits (refer to the section "Last 25 Percent Rule"). Two diplomas are awarded, and a notation recognizing the completion of the dual degrees is placed on the student's permanent academic record.

### Minor areas of concentration

Although a minor is not required for completion of a degree, a student may elect any approved minor area of concentration. A minor is the completion of a group of courses within an area of specialization. Usually the minor requires less course work than the major. The minor may be used to fulfill career needs or to facilitate in-depth investigation in a discipline of secondary interest to the student.

A student who wishes to pursue a minor must complete a Change of Major/Minor Form. The courses for the minor are chosen from courses approved for the minor. Students must achieve a minimum 2.0 GPA in the area of the minor. The minor becomes official only after the Office of Records and Registration has received the Change of Major/Minor Form signed by the dean or chair of the appropriate school. A notation recognizing the fulfillment of the requirements for a minor are posted on the student's permanent record at the time of graduation. The student must submit a Minor Application Form when the student submits an application for graduation. Minor Application Forms are available at the Student Services Centers in Founders Hall and Sanger Hall.

### Appeal to waive an academic regulation, Academic Regulations Appeals Committee

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The Academic Regulations Appeals Committee (ARAC) considers appeals for exceptions to undergraduate program academic regulations listed in this bulletin. The committee, composed of faculty and administrators from each school and the college, and representatives from the Office of Records and Registration, Office of Community Programs and the Division of Student Affairs, is a standing committee of the Office of Academic Affairs. The provost and vice president for academic affairs appoints committee members.

Undergraduate students who wish to petition the university for a waiver of the regulations in this bulletin may do so through the ARAC. Examples of typical petitions are requests for retroactive withdrawal, waiver of the continuance policy following a suspension, or a waiver of the rule requiring that the last 25 percent of a program be earned

in residence at VCU. Students may petition for past semesters, but cannot ask for waivers after having graduated.

To begin the appeal process, students should contact the ARAC representative in the dean's office for their school or the college; special students should contact the Office of Community Programs. The student then works with the representative to prepare the petition following guidelines established by each school and the college. The first step is for the student to prepare a letter which details the extenuating circumstances supporting the student's belief that the university should waive its regulations and grant the request. All circumstances cited in the student's letter must be documented, and the student is responsible for gathering all the necessary documentation.

Examples of documentation include medical records, police reports, death certificates and employer reports. Things which may not be used as documentation include letters from parents, friends or relatives. Any petition which does not have the required documentation will not be heard.

After the ARAC representative receives the student's letter and all necessary documentation, he or she will prepare a petition cover sheet and, if appropriate, gather pertinent information from faculty. When the petition is complete, it will be presented to the committee at one of its semimonthly meetings. Requests are granted or denied by a majority vote by the committee. Decisions are effective immediately, and students are notified by their representative. All committee

procedures are confidential and ensure the right of privacy of the student.

Since a request to waive a regulation is itself an appeal, committee decisions are final, and there is no further appeal within the university. However, if new documentable information is provided, petitions may be brought back before the committee. A rewritten student letter does not constitute new documentation. The representative will request that the petition be reheard based upon the new information and the committee will vote on that request.



# *Special Academic Programs and Services*

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**Whether a student is looking for extra challenges from the University Honors Program or needs assistance to meet academic or physical challenges from the Office of Students with Disabilities, VCU is devoted to providing such programs and services in order to meet the needs of its community.**

**University Honors Program**

920 W. Franklin St. • PO Box 843010  
 Richmond VA 23284-3010  
 (804) 828-1803 • Fax (804) 828-1355  
[www.vcu.edu/honors](http://www.vcu.edu/honors)

**University Honors Program****John F. Berglund**

Director

**Anne L. Chandler**

Associate Director

The University Honors Program at Virginia Commonwealth University was established to meet the needs of academically talented undergraduate students through a challenging and exciting program with high academic standards. The University Honors Program offers students an opportunity to exchange ideas, ask questions, and explore values with bright fellow students and teachers who have been selected carefully for their scholarship and teaching excellence. The University Honors Program offers the opportunity for students to expand their creative and intellectual horizons, and to benefit from small classes in which there is greater interaction between students and faculty and among students themselves. For a detailed description of qualifications for admission see Part II.

**Graduation with University Honors**

Academic advisers at VCU help students in the University Honors Program select classes that will fulfill the requirements for graduation and match students' interests. In addition, these students are eligible to take courses designated as "honors." Some honors courses are special sections of regular courses open only to University Honors Program students, in which class size is limited to maximize opportunities for interaction directly with the instructor and fellow students. Other honors courses are specialized courses for the University Honors Program. Of particular interest among these are modules. These modules are single-focus topics courses, which occupy only one-third of a semester. The modules are often interdisciplinary and strive to connect rather than isolate studies. Each module counts for 1.5 credit hours. All honors courses are noted on the student's official transcript.

To graduate with University Honors, students should complete 18 hours in courses designated as "honors." Of these courses, students are required to take at least six modules. In addition to completing at least six module courses and maintaining a GPA of 3.50 or higher, the student must present a dossier documenting how the student has become a well-educated individual. The dossier will be presented to the director and the University Honors Council in the penultimate semester of the student's academic work. See the Honors Handbook for specific deadline dates.

In the dossier, students refer to the following guidelines explaining how they have been fulfilled or explaining why an alternative was more appropriate in the student's particular situation.

**Guidelines and regulations**

- 1.) Students in the University Honors Program must have at least a 3.50 cumulative GPA and a 3.20 GPA in honors courses.
- 2.) Honors students should achieve a standard of excellence in general education as well as in the student's major field.
- 3.) Honors students should show well-roundedness by enrolling in at least two upper-level courses outside their field of specialization.
- 4.) The honors student should complete at least 18 credit hours in courses designated as honors courses. Among these, the honors student must include at least nine credit hours in module courses. Modules are short courses which carry 1.5 credits each. The purpose of the module is to offer the honors student the opportunity to focus on special topics in a challenging academic format. The honors student must complete at least six modules, and the nine credits thus earned may be counted as part of the 18 credits in honors courses.

It is important to note that the ideas expressed previously are to be considered as guidelines to the development of a dossier. Only the GPA minimums and the six modules are non-negotiable. The central objective of the University Honors Program is that the student demonstrate good scholarship and sound learning in the best of the university's tradition.

**Special opportunities**

The University Honors Program sponsors a variety of intellectual, cultural and social activities as important supplements to classroom study. Among these are:

**The Honors Idea Exchange** — an approved student campus organization composed of University Honors Program students. The Idea Exchange decides each year on its projects and activities. In the past these have included picnics and potluck suppers on the social side and tutoring children and adults, and environmental clean-ups on the projects side. The main activity, however, is what the name implies: exchanging ideas.

**Weekly Brown Bag Lunches** — informal discussions on topics pertinent to the wide-ranging interests of honors students. Discussions are led by outstanding guest speakers from the university faculty and administration, and from many different fields in the community.

**Honors Seminars** — an arena where students can witness and participate in dialogue between faculty. With more structure than Brown Bag Lunches, the seminars afford the opportunity for presenting scholarly ideas for discussion and debate.

**Outstanding Lecturer Series** — world-renowned scholars are brought to VCU to lecture on topics of interest and concern to University Honors Program students. Students have the opportunity to meet informally with the speakers.

The University Honors Program is committed to enriching the students' academic and personal endeavors. Since people in the University Honors Program are serious students, special privileges beyond the vast resources available to all VCU students are provided. Some of these privileges include:

- registration priority,
- special library privileges, and
- availability of special housing.

The center of activities and community for the University Honors Program is in the Valentine House, a Victorian brownstone house at 920 W. Franklin St. In the house students have meeting rooms, quiet study rooms, a copy machine, computers and recreational areas. Valentine House is open day and night for study.



## Courses in honors (HONR)

### HONR 190 Freshman Seminar

Semester course; 1 lecture hour. 1 credit. Restricted to freshman in the University Honors Program. This course develops a learning paradigm for students appropriate to university education. Students are expected to gain a willingness to take intellectual risks in meeting academic challenges, to engage in their own learning actively, and to take greater responsibility for their own education. A thorough orientation to the library and other university resources is included. The students will hone analytical skills while examining selected topics from a perspective that emphasizes critical interpretation rather than mastery of information. The students will engage in collaborative projects on specified topics. Attendance at certain University Honors Program events is required.

### HONR 198 Freshman Honors

Semester course; 3 lecture hours. Variable credit; maximum total eight credits. May be repeated once under different topic. Prerequisite: Permission of the director of the University Honors Program. An interdisciplinary course which will provide an intensive study of selected topics.

### HONR 298 Sophomore Honors

Semester course; 3 lecture hours. Variable credit; maximum total eight credits. May be repeated once under different topic. Prerequisite: Permission of the director of the University Honors Program. Appropriate prerequisite or corequisites may be demanded. An interdisciplinary course which will provide an intensive study of selected topics.

### HONR 398 Honors Topics

Semester course; 3 lecture hours. Variable credit; may be repeated with different topics. Prerequisite: Permission of the director of the university honors program. Appropriate prerequisite or corequisites may be demanded. An in-depth study of selected topics. May be cross-listed with departmental courses. See the Schedule of Classes for specific topics to be offered each semester.

### HONR 399 Honors Module

One-third semester course; 3 lecture hours. 1.5 semester hours of credit per module. Prerequisite: Permission of the director of the University Honors Program. Intensive studies of topics from a wide spectrum of disciplines are undertaken. Each module is a self-contained unit. Nine semester hours of credit must be taken in honors modules to complete the honors core curriculum. See the Schedule of Classes for topics.

### HONR 492 Honors Independent Study

Semester course; maximum total of 9 semester hours of credit over all semesters. Variable credit. Prerequisites: Junior or senior standing, approval of the director of the University Honors Program and instructor/tutor. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

## Dietetic internship

A post-baccalaureate, accredited dietetic internship is offered through

the Medical College of Virginia Hospitals. Qualified applicants must have completed an undergraduate or graduate program in dietetics. For additional information contact the Dietetic Internship Director, Medical College of Virginia Hospitals, Virginia Commonwealth University, P.O. Box 980294, Richmond, VA 23298-0294.

## Rehabilitation services

Undergraduate courses in rehabilitation services are offered in interdisciplinary cooperation with other majors. Such offerings are Pathways, a unique interdisciplinary program concentration designed for students interested in pursuing alcohol and drug rehabilitation studies, and the Bachelor of Interdisciplinary Studies Program with a focus in a rehabilitation services area. For specific information see Part IX, Part XX and "Pathways" in this section of the bulletin.

## Pathways

Pathways, initiated in the spring of 1996, is a unique interdisciplinary program concentration designed for students from a wide variety of academic departments who are interested in studies in substance abuse education and rehabilitation. A sequence of recommended courses is offered to students who are majoring in psychology, criminal justice, social work, pharmacy, nursing and rehabilitation counseling. Other academic and professional disciplines also are included and welcome to participate in the program. The sequence of course work depends upon the level of intensity sought by the student, and it may range from a single introductory course to a complete specialization. Pathways enables students to select a curricular path which matches their substance abuse rehabilitation interest regardless of their discipline. The program is available to students from pre-degree levels to doctoral studies, and is arranged in collaboration with the student's major adviser and/or the director of the Rehabilitation Substance Abuse Counselor Education Program, Department of Rehabilitation Counseling.

## Certificate programs

### Post-baccalaureate certificate programs

accounting  
aging studies  
applied social research

criminal justice  
environmental studies  
human resource development  
human resource management  
information systems  
marketing  
mathematical sciences  
computer science  
statistics  
patient counseling  
planning information systems  
pre-medical basic health sciences  
anatomy  
biochemistry and molecular biophysics  
human genetics  
microbiology and immunology  
pharmacology and toxicology  
physiology  
public management  
real estate and urban land development  
teaching  
urban revitalization

### Post-master's certificate programs

nurse practitioner  
principalship  
professional counseling  
reading specialist

For additional information, see the academic program's section of this bulletin and the Graduate Bulletin.

## Minors

In addition to the major, a student may elect a minor area of concentration in any program or department offering such a program. The minor can be used to fulfill career needs. It can also serve as a means for the student to study a discipline of secondary interest.

African-American studies  
American studies  
art history  
anthropology  
biology  
business, general  
chemistry  
computer science  
crafts  
criminal justice  
dance  
economics  
education  
foundations of special education  
health education  
physical education

engineering  
 chemical  
 electrical  
 mechanical  
 English  
 environmental studies  
 fashion merchandising  
 French  
 geography  
 German  
 history  
 international studies  
 Judaic studies  
 Latin American studies  
 marketing  
 mathematical sciences  
 music  
 painting and printmaking  
 philosophy  
 philosophy of law

photography/film  
 physics  
 political science  
 psychology  
 public management  
 recreation, parks and tourism  
 religious studies  
 Russian area studies  
 sculpture  
 social welfare  
 sociology  
 Spanish  
 statistics  
 substance abuse services  
 urban studies  
 women's studies  
 writing (see English)

For a complete list of academic degree programs, see the academic program's section of this bulletin.

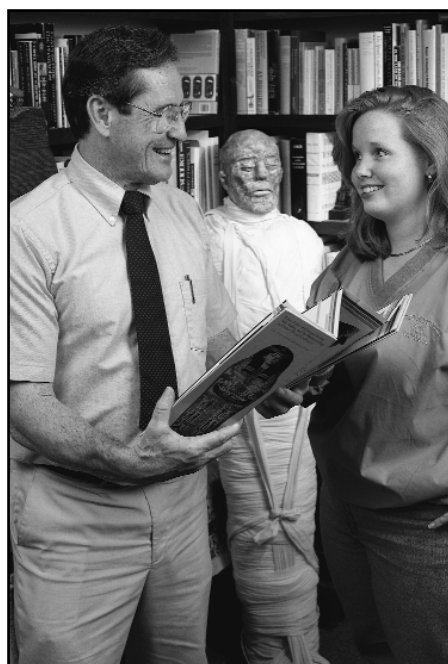
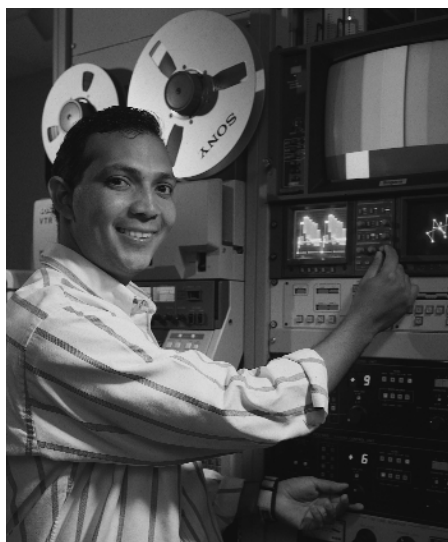
# College of Humanities and Sciences

## Undergraduate Programs and Specializations

Biology – B.S.  
Chemistry – B.S.  
Computer Science – B.S.  
Criminal Justice – B.S.  
Economics – B.S.  
English – B.A.  
Foreign Languages – B.A.  
    comparative literature, French, German, Spanish  
History – B.A.  
Interdisciplinary Studies – B.I.S.  
Mass Communications – B.S.  
    advertising, electronic media, news-editorial,  
    public relations  
Mathematical Sciences – B.S.  
    applied mathematics, computer science,  
    mathematics, operations research, statistics  
Philosophy – B.A.  
    ethics and public policy  
Physics – B.S.  
Political Science – B.A.  
Psychology – B.S.  
    urban psychology  
Religious Studies – B.A.  
Science – B.S.  
    environmental studies, general science, biology  
    chemistry, mathematical sciences  
Sociology and Anthropology – B.S.  
Urban Studies and Planning – B.S.  
    environment, information systems, planning  
    public management, public policy and social change

pre-professional programs  
    pre-clinical laboratory sciences, pre-dental hygiene,  
    pre-dentistry, pre-law, pre-medicine, pre-nursing,  
    pre-occupational therapy, pre-optometry,  
    pre-pharmacy, pre-physical therapy, pre-radiation  
    sciences, pre-veterinary medicine

other programs of study  
    African-American studies  
    environmental studies  
    Judaic studies  
    military science  
    undeclared  
    women's studies



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**The College of Humanities and Sciences is the central point of liberal arts and sciences education at VCU. Its mission is to create a well-rounded educational background for each of its graduates to carry forth into their professional endeavors or their preparation for graduate study.**

**900 Park Ave. • P.O. Box 842507**  
**Richmond, VA 23284-2507**  
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**Stephen D. Gottfredson**

Dean (1997)

B.A. 1971 University of Oregon

M.A. 1977 and Ph.D. 1977 Johns Hopkins University

**Albert T. Sneden**

Associate Dean and Professor of Chemistry (1977)

B.S. 1968 Carnegie Mellon University

Ph.D. 1975 Brandeis University

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Associate Dean (1971)

A.B. 1960 and M.Ed. 1964 Marquette University

Ph.D. 1974 Loyola University

**Laura J. Moriarty**

Assistant Dean and Associate Professor

of Criminal Justice (1993)

B.C.J. 1984 and M.S. 1985 Louisiana State University

Ph.D. 1988 Sam Houston State University

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Associate Professor of Biology (1968)

B.S. 1961 Brooklyn College

Ph.D. 1969 University of Illinois

**Marcia Zwicker**

Director of Undergraduate Academic Advising (1965)

A.B. Brown University

M.A. 1964 University of Connecticut

**Sherry B. Mikuta**

Director of Academic Program Development (1982)

B.S. 1969 Virginia Polytechnic and State University

M.B.A. 1982 Virginia Commonwealth University

professional programs of study which link a foundation of understanding and knowledge with skills on which students can build careers, become responsible citizens and continue lifelong learning.

Scholarship, creative work and professional accomplishment are essential to teaching and learning. The college is responsible for advancing understanding and increasing knowledge for its own sake, for the educational benefit of our students, and for the good of the larger community.

In both teaching and research, the College of Humanities and Sciences seriously upholds the responsibilities of being part of a public, metropolitan university. Through service and public teaching, the college meets the challenges and opportunities afforded by VCU's urban environment and by its location in the capital of the commonwealth.

The college achieves national and international recognition through the success of our students, the advancement of the disciplines and professions represented by its programs, and through the individual and collaborative research of its faculty.

### Undergraduate degree programs

The College of Humanities and Sciences offers baccalaureate degrees in 18 areas:

Biology – B.S.  
 Chemistry – B.S.  
 Computer Science – B.S.  
 Criminal Justice – B.S.  
 Economics – B.S.  
 English – B.A.  
 Foreign Languages – B.A.  
     comparative literature  
     French  
     German  
     Spanish  
 History – B.A.  
 Interdisciplinary Studies – B.I.S.  
 Mass Communications – B.S.  
     advertising  
     electronic media  
     news-editorial  
     public relations  
 Mathematical Sciences – B.S.  
     applied mathematics  
     computer science  
     mathematics  
     operations research  
     statistics  
 Philosophy – B.A.  
     ethics and public policy

Physics – B.S.  
 Political Science – B.A.  
 Psychology – B.S.  
     urban psychology  
 Religious Studies – B.A.  
 Science – B.S.  
     environmental studies  
     general science  
     biology  
     chemistry  
     mathematical sciences  
 Sociology and Anthropology – B.S.  
 Urban Studies and Planning – B.S.  
     environment  
     information systems  
     planning  
     public management  
     public policy and social change

Information concerning curricula is given in the respective departmental and school sections.

### Minor areas of concentration

In addition to a major, a student may elect a minor area of concentration in any program or department offering such a program. The minor can be used to fulfill career needs or serve as a means for the student to study a discipline of secondary interest.

Students interested in pursuing a minor should discuss their intentions with their advisers or the chair of the major department. When the student decides on a minor, a Change of Major/Declaration of Minor form must be completed in the Office of Records and Registration. When the student files for graduation, the student must complete the Minor Application along with the Graduation Application.

Courses for the minor should be chosen from courses approved by departments offering minors in their areas. Generally, students can not minor in the same area as their major.

A minor designation on the transcript requires a minimum of 18 credit hours and a minimum 2.0 GPA must be achieved in the minor. Prerequisites for courses are stated under course descriptions in this bulletin.

Detailed descriptions of each minor appear under the various departmental headings in this section of the bulletin.

Minors are offered in the following areas:

African-American studies  
 American studies

### Mission of the college

The faculty and staff of the College of Humanities and Sciences are dedicated to excellence in teaching, research and public service. The mission of Virginia Commonwealth University provides the framework for this pursuit of excellence.

Teaching and learning are central to the college, and the college is central to the educational and intellectual life at VCU. The college meets the educational needs of a diverse student body, provides general education for all undergraduate students of the university, preparatory programs for the health sciences, engineering and law, and educates future teachers in the liberal arts and sciences. The college offers comprehensive undergraduate, graduate and

anthropology  
 biology  
 chemistry  
 computer science  
 criminal justice  
 economics  
 English  
 environmental studies  
 French  
 geography  
 German  
 history  
 international studies  
 Judaic studies  
 Latin American studies  
 mathematical sciences  
 philosophy  
 philosophy of law  
 physics  
 political science  
 psychology  
 public management  
 religious studies  
 Russian area studies  
 sociology  
 Spanish  
 statistics  
 substance abuse services  
 urban studies  
 women's studies  
 writing (see English)

## Preparation for professional studies

In addition to providing studies in liberal arts at the undergraduate and graduate levels, the college offers undergraduate preparatory programs and advising for the following areas:

pre-clinical laboratory sciences  
 pre-dental hygiene  
 pre-dentistry  
 pre-law  
 pre-medicine  
 pre-nursing  
 pre-occupational therapy  
 pre-optometry  
 pre-pharmacy  
 pre-physical therapy  
 pre-radiation sciences  
 pre-veterinary medicine

Specific curricular descriptions are listed elsewhere in this section.

## Teacher preparation

Students in the college can apply to the Extended Teacher Preparation Program sponsored jointly with the

School of Education. This program awards both a bachelor's degree from the College of Humanities and Sciences and a master's degree from the School of Education. Students who successfully complete this program will be certified to teach in early childhood, middle, secondary or special education.

Additional information on this five-year program is available at the School of Education's Office of Academic Services in Room 2087, Oliver Hall, or by calling (804) 828-1927. A more thorough description of this program is found under the "School of Education" section of this bulletin and in the Extended Teacher Preparation Handbook available from the Division of Teacher Education or the College of Humanities and Sciences Dean's Office.

## Graduate studies

Master's degree programs are offered in biology, chemistry, computer science, creative writing, criminal justice (including forensic science), English, history, mass communications, mathematical sciences, physics and applied physics, psychology, sociology and urban and regional planning.

Doctoral programs are available in chemistry (including chemical physics) and psychology. Doctoral programs also are available in social policy and social work through the School of Social Work and in urban services through the School of Education. The Graduate Bulletin describes these graduate programs in detail.

## Student advising

Individual student advising is an integral part of the programs in the college. An important personal link in the university organization, the faculty adviser helps each student establish a relationship between the student's special needs and university services. The adviser also assists the student in career selection and helps the student in understanding university procedures.

Undeclared majors and freshmen receive advising through the Office of Academic Advising. After the freshman year or when the undeclared student declares a major, the department in which the student intends to major assigns a faculty adviser to each student.

**Students are responsible for making sure course selections satisfy graduation requirements of the departmental major programs, general requirements of the College of Humanities and Science and general degree requirements of the Academic Campus.** Consultation with the adviser, and/or dean, along with frequent reference to this bulletin and Humanities and Sciences Graduation Worksheets ensure that students meet these responsibilities.

Students also are responsible for familiarizing themselves with academic regulations of the Academic Campus concerning change of major, continuance, etc., as explained in Part VI of this bulletin.

## Educational goals

The ultimate goal of a liberal education is to help students develop the abilities to think and continue learning. These abilities will aid students as they take their places in a world dominated by change. These abilities also will aid students in their future endeavors as they encounter problems, whether in their personal or professional lives, or in their communities. Graduates of the College of Humanities and Sciences are broadly educated, not simply trained, allowing them to function as understanding participants in events rather than as spectators or even victims of those events.

To achieve this goal, the faculty of the College of Humanities and Sciences has identified the following specific requirements.

- Students should write well, organize their ideas, support them and communicate them clearly and effectively.
- Students should reason logically and be able to quantify experiences.
- Students should have knowledge of the fundamental ideas and methods of the natural sciences.
- Students should be able to analyze ethical conflicts.
- Students should have an understanding of literature and the other arts.
- Students should have a knowledge of American heritage and those of other cultures, along with an introduction to a foreign language.
- Students should have a basic knowledge of human behavior

and social, political and cultural institutions.

## Graduation requirements

For students majoring in a four-year bachelor of art or bachelor of science degree program (including students in the pre-dental, pre-medical, pre-optometry, pre-veterinary and extended teacher preparation program classifications), there are four areas of requirements that the student must complete for graduation:

1. Undergraduate General Education Program requirements (see Part I of this bulletin),
2. General education requirements of the College of Humanities and Sciences (see departmental major sections for collateral requirements),
3. departmental major requirements and
4. electives to complete the total of a minimum of 120 credits.

## General education requirements

In the following section, specific courses that fulfill general education requirements are described. Approved lists from which students must choose courses to complete particular requirements also are listed in this section.

Specific courses recommended by a department to fulfill one or more of the College of Humanities and Sciences general education requirements are listed under the degree requirement heading in each departmental section. Students should check these listings.

Major or minor courses may fulfill general education requirements when those courses appear among the following general education requirements or on the approved lists of courses. However, no one course can be used to fulfill two general education requirements, with the exception of courses used to meet the "writing intensive" or "urban environment" requirements.

All bachelor of arts and bachelor of science degree programs require students to complete a minimum of 120 credits. No more than four of those credits can be physical education/activity courses.

## General education requirements for bachelor of arts and bachelor of science degrees

The purpose of general education courses in the College of Humanities and Sciences is to provide a foundation for lifelong learning among its students. This foundation includes the acquisition of information, the capacity and the propensity to engage in inquiry and critical thinking, the use of various forms of communication, an awareness of the diversity of human experience, an understanding of the natural world and an appreciation of the responsibilities of people to themselves, to others and to the community.

### Level I: Skills and competencies requirements

#### 1. Written communication 8-12\*

**A. Composition and rhetoric.** ENGL 101-200 or equivalent, with minimum of "C" grade in each course. All students who have not received credit for first semester freshman composition and rhetoric through AP, IB, dual enrollment or a college course must enroll in ENGL 101, ENGL 200 is taken in the second semester of sophomore year.

**B. Writing intensive requirement.** Two writing intensive (WI) courses. Students must fulfill both of the following:

- i) One writing intensive course within the student's major. See "Approved list A" in the Schedule of Classes each semester.
- and
- ii) One writing intensive course from several alternatives or from the major. See "Approved list A" in the Schedule of Classes each semester.

The process of writing takes place in all disciplines. Specific sections of courses will be designated in a variety of disciplines that will provide students with opportunities for substantial writing while at the same time completing a major course or elective.

\* This figure assumes six credits in ENGL 101-200 and two-six credits in writing intensive courses.

#### 2. Mathematical and statistical reasoning 3-6

Proficiency in mathematics through the level of algebra and one course in statistics as specified by the major department. (Check major departmental section of this bulletin.)

**A. Mathematics.** Proficiency may be demonstrated through the Placement Test or acquired through completion of MATH 131 Introduction to Contemporary Mathematics or MATH 151 Precalculus Mathematics.

**B. Statistics.** One three-credit course chosen from STAT 208 Statistical Thinking or STAT 210 Basic Practice of Statistics. Check departmental major section for required statistics course. Mathematical sciences and computer science majors must take STAT 212 Concepts of Statistics.

Students majoring in physics or the professional sequence in the chemistry major will have the statistics requirement fulfilled through required 300-level mathematics courses as specified by the major.

**All students who have not started or completed the mathematics sequence in their curriculum must take the Mathematics Placement Test.**

#### 3. Critical thinking 0

Critical thinking activities are incorporated in general education courses. In addition, critical thinking activities will be embedded in specific parts of major curricula and courses.

#### 4. Computer literacy and information retrieval 0

Students should be able to understand basic computer concepts in order to accomplish a wide variety of tasks, including gathering information, organizing and analyzing data, synthesizing information, and communicating ideas.

#### All students must either:

- A. pass the Computer Proficiency Examination prior to graduation; or
- B. successfully complete CMSC 128 Computer Concepts and Applications (three credits).

### Level II: Areas of inquiry requirements

#### 5. Ethical principles 3

One course in ethics either within the major or from another department (see "Approved list C").

#### 6. Natural sciences 7-9

Two natural science courses, one from the physical sciences and one from the biological sciences. One of the two courses must include a laboratory (see "Approved list D"). Check departmental major section of this bulletin for required courses to fulfill this requirement.

#### 7. Visual and performing arts 2-4

One course in the visual or performing arts (see "Approved list E").

#### 8. Literature 3

One literature course (see "Approved list F").

#### 9. Civilization 8-9

Courses dealing with the origins of the modern world, 20th century United States society, and the contemporary interdependent world.

Students must take one course (three credits) from each of the following areas (nine credit total), but no more than six credits in any one discipline; or take two four-credit interdisciplinary courses (eight credit total) that combine elements of A, B and C below.

- A. Historical and cultural origins (see "Approved list G").
- B. American (United States) studies (see "Approved list H").
- C. Global studies (see "Approved list I").

## 10. Foreign language

0-8

Completion of a foreign language through the 102 level or equivalent course or by placement. **English, history and political science majors require competency through the intermediate level (202 or 205) or 0-14 credits.** (Check with the Department of Foreign Languages for availability of the intermediate level of the language.)

Students may present American Sign Language courses in fulfillment of the foreign language requirement. Contact the Humanities and Sciences Academic Advising Office for the conditions of use.

- A. Freshmen who wish to continue in their high school language will be given a placement test to determine the level at which they will begin language study for credit. Students desiring to begin study of a language different than the high school language need not take the placement test and may begin with the elementary (101) course for credit.
- B. Students transferring from other colleges and universities with advanced placement (credit) or advanced standing through placement will receive credits as granted by the other institutions and should register for the next course in the sequence. Transfer students who have not begun foreign language study at the collegiate level and who wish to continue study with their high school language are subject to the provisions of the previous paragraph.
- C. New freshmen and transfer students who qualify through the elementary level (102) of a foreign language on the placement test (or the 202 level for English, history or political science majors) receive no semester credit but have satisfied the language requirement.

## 11. Human behavior

4-6

Students must complete one of the following options:

- A. Two courses (six credits) in different disciplines focusing on human behavior (see "Approved list J");
- or**
- B. One four-credit interdisciplinary course focusing on human behavior (see "Approved list J").

## 12. Urban environment

3

Students attending a public, urban university should have some understanding and appreciation of the

urban environment, the challenges and opportunities that face cities today, and the influences of cities on human activities. The three-credit requirement dealing with aspects of modern urban life may be completed within the major, through general education courses, or as an elective. With a few exceptions, the course will be taken at VCU during the last 60 credits (see "Approved list K").

## Major requirements

See departmental curriculum for exact number of credits (30 credit minimum).

## Elective requirements

Elective courses to complete the total required 120 credits.

## Approved lists

### Approved lists – students entering fall 1997 and thereafter

#### Approved list A – Written communications

(See course descriptions in this bulletin for any prerequisites.)

##### Freshman English

- ENGL 101 Composition and Rhetoric I
- ENGL 200 Composition and Rhetoric II (Taken in second semester of sophomore year.)

##### Writing intensive courses

- ANTH/INTL 301 The Evolution of Man and Culture
- ANTH 315 Anthropological Field Methods and Research Design
- ANTH 348 South American Ethnography
- ANTH 349 Contemporary Cultures of Latin America
- ANTH 425 Religion, Magic, and Witchcraft
- BIOL 300 Experimental Methods (.5 WI credit)
- BIOL 300 Experimental Methods Laboratory
- BIOL 309 Entomology (.5 WI credit)
- BIOL 310L Laboratory in Genetics (.5 WI credit)
- BIOL 311L Animal Physiology Laboratory (.5 WI credit)
- BIOL 312L Invertebrate Zoology Laboratory (.5 WI credit)
- BIOL 317L Ecology Laboratory (.5 WI credit)
- BIOL 320 Biology of the Seed Plant (.5 WI credit)
- BIOL 321L Plant Development Laboratory
- BIOL 392 Introduction to Research
- BIOL 401 Applied and Environmental Microbiology
- BIOL 445 Neurobiology and Behavior (.5 WI credit)
- BIOL 518 Plant Ecology (.5 WI credit)
- BIOL 522 Evolution and Speciation
- BIOL 540 Fundamentals of Molecular Genetics (.5 WI credit)

- CHEM 304L Physical Chemistry Laboratory
- CHEM 409L Instrumental Analysis Laboratory
- CMSC 490 Research Seminar in Computer Science
- CRJS 480 Senior Seminar (Criminal Justice)
- ECON 302 Macroeconomic Theory
- ENGL/WMNS 384 Women Writers
- ENGL/ENVS 385 Nature Writing

- ENVS 490 Research Seminar in Environmental Studies
- FREN 300, 301 Advanced Grammar and Writing
- GRMN 300 Advanced Grammar and Writing
- HIST 490 Seminar in History
- INSC 301 Investigatory Mathematics and Science
- INTL 348 South American Ethnography
- INTL 349 Contemporary Cultures of Latin America
- INTL 365 International Political Economy
- MASC 203 Newswriting
- MASC 333 Public Relations Writing
- MASC 363 Electronic Media Writing I
- MASC 375 Legislative Reporting
- MASC 403 Advanced Reporting
- MASC 404 Specialized/Project Reporting
- MATH 530 History of Mathematics
- MATH 531 Expositions in Modern Mathematics
- PHIL 301 Mind and Reality
- PHIL 302 Reason and Knowledge
- PHIL 303 Philosophy of Language
- PHIL 320 Philosophy of Law
- PHIL 335 Social and Political Philosophy
- PHIL 490 Seminar in Philosophy
- PHYS 490 Seminar in Conceptual Physics
- POLI 341 History of Political Thought
- POLI 365 International Political Economy
- PSYC 317 Experimental Methods
- RELS/ENGL 361 The Bible as Literature
- RELS/PHIL 412 Zen Buddhism
- RELS 490 Seminar: Cuban Life
- RELS 491/WMNS 391 Global Women's Spirituality
- SOCY 402 Sociological Theory
- SOCY 436 Sociology of Work
- SPAN 300 Advanced Grammar and Writing
- URSP/GEOG 306 Urban Economic Geography
- WMNS 301 Feminist Theory

#### Approved list B – Mathematics and statistics

(See course descriptions in this bulletin for any prerequisites.)

- MATH 131 Introduction to Contemporary Mathematics
- MATH 151 Precalculus Mathematics
- MATH 200 Calculus with Analytic Geometry
- STAT 208 Statistical Thinking
- STAT 210 Basic Practice of Statistics
- STAT 212 Concepts of Statistics (for science majors only)

#### Approved list C – Ethical principles

(See course descriptions in this bulletin for any prerequisites.)

- MASC 290 Ethical Problems in Mass Media
- PHIL 211 History of Ethics
- PHIL 212 Ethics and Applications
- PHIL 213 Ethics and Health Care
- PHIL 214 Ethics and Business
- RELS 340 Global Ethics and the World's Religions
- SOCY 445 Medical Sociology

#### Approved list D – Natural sciences

(See course descriptions in this bulletin for any prerequisites.)

##### Biological sciences

- BIOL 101 Life Science

BIOL 101L Life Science Laboratory  
 BIOL 102 Science of Heredity  
 BIOL 102L Science of Heredity Laboratory  
 BIOL 103/ENVS 103 Environmental Science  
 BIOL 103L/ENVS 103L Environmental Science Laboratory  
 BIOL 151 Introduction to Biological Science I  
 (for biology and other majors)  
 BIOL 151L Introduction to Biological Science Laboratory I  
 (for biology and other science majors)  
 BIOL 152 Introduction to Biological Science II  
 (for biology and other science majors)  
 BIOL 152L Introduction to Biological Science Laboratory II  
 (for biology and other science majors)  
 Physical sciences  
 CHEM 101 General Chemistry (for science majors)  
 CHEM 101L General Chemistry Laboratory  
 (for science majors)  
 CHEM 110 Chemistry and Society  
 CHEM 110L Chemistry and Society Laboratory  
 CHEM 112 Chemistry in the News  
 PHYS 101 Foundations of Physics  
 PHYS 101L Foundations of Physics Laboratory  
 PHYS 103 Elementary Astronomy  
 PHYS 103L Elementary Astronomy Laboratory  
 PHYS 107 Wonders of Technology  
 PHYS 202 General Physics II (for science majors)  
 PHYS 202L General Physics II Laboratory  
 (for science majors)  
 PHYS 208 University Physics II (for science majors)  
 PHYS 208L University Physics II Laboratory  
 (for science majors)

#### Approved list E – Visual and performing arts

##### A. Basic level courses designed specifically for non-arts majors.

Art education  
 ARTE 121-122 The Individual in the Creative Process  
 ARTE 301-302 Art for Elementary Teachers  
 ARTE 408 Two-Dimensional Art Experiences  
 ARTE 409 Three-Dimensional Art Experiences  
 Art foundation  
 ARTF 121-122 Introduction to Drawing  
 Communication arts and design  
 CARD 191 Studio Topics in Communication Arts and Design  
 Dance and choreography  
 DANC 171, 172 T'ai Chi  
 DANC 183-184 Introduction to Modern Dance Technique  
 DANC 313 Dance in World Cultures  
 Interior design  
 IDES 103-104 Introductory Studio Course  
 Music  
 APPM 191-192 Class Lessons in Piano  
 APPM 193-194 Class Lessons in Voice  
 APPM 195-196 Class Lessons in Guitar  
 MUSC 111 MIDI Programming and Synthesis  
 MHIS 105-106 Introduction to Writing Music  
 MHIS 243 Music Appreciation  
 Painting and printmaking  
 PAPR 155, 156 Drawing and Painting, Basic

Photography and film  
 PHTO 243 Photography  
 Theatre  
 THEA 107, 108 Introduction to Stage Performance

##### B. Basic level courses open to both arts and non-arts majors.

Art education  
 ARTE 353 Art and Perceptual Communication  
 Art history  
 ARTH 103, 104 Survey of Western Art  
 ARTH 145, 146 Survey of Oriental Art  
 ARTH 207 Introduction to Non-Western Art  
 ARTH 270, 271 History of the Motion Picture  
 Crafts  
 CRAF 201-202 Metalsmithing  
 CRAF 211-212 Jewelry  
 CRAF 221 Woodworking Techniques  
 CRAF 241 Ceramics: Handbuilding  
 CRAF 242 Ceramics: Wheelthrowing  
 CRAF 251, 252 Introduction to Glassworking  
 CRAF 261, 262 Beginning Textiles  
 Dance and choreography  
 DANC 105-106 Improvisation  
 DANC 107 Contemporary Dance Perspectives  
 DANC 111-112 Ballet Technique I  
 DANC 114, 214, 314, 414 Summer Dance Workshops  
 DANC/AFAM 121, 122 Tap Technique I  
 DANC/AFAM 126, 127 African-Caribbean Dance I  
 DANC 141, 142 Ballroom Dancing  
 DANC 243 Dynamic Alignment  
 DANC 291 Topics in Dance  
 DANC 308 Dance History  
 DANC 313 Dance in World Cultures  
 Fashion design and merchandising  
 FASH 290 Textiles for the Fashion Industry  
 FASH 319 20th Century Fashions  
 Music  
 APPM 300-level Private Instruction: Principal and Secondary Performing Mediums  
 APPM 370 Large Ensembles (auditions required for some sections)  
 APPM 390 Small Ensembles (auditions required for all sections)  
 MUSC 112 Synthesizer and Composition  
 MHIS 120 Introduction to Musical Styles  
 MHIS/AFAM 250 Introduction to African-American Music  
 MHIS 280 Survey of 20th Century American Popular Music  
 Photography and film  
 PHTO 233 Elements of the Moving Image  
 Sculpture  
 SCTP 209 Introduction to Sculpture  
 Theatre  
 THEA 103 Stagecraft  
 THEA 104 Costume Construction  
 THEA 211-212 Introduction to Drama  
 THEA 221 and 221L Basic Scene Design and Laboratory  
 THEA 229 Introduction to Lighting Design  
 THEA/AFAM 303 Black Theatre

##### C. Advance level courses open to both arts and non-arts majors. Some require special permission/audition.

Dance and choreography  
 DANC 221, 222 Tap Technique II  
 DANC 319, 320 Video/Choreography Workshop  
 DANC 343 Body Imagery

#### Approved list F – Literature

ENGL 201 Western World Literature I  
 ENGL 202 Western World Literature II  
 ENGL 203 British Literature I  
 ENGL 204 British Literature II  
 ENGL 205 American Literature I  
 ENGL 206 American Literature II  
 ENGL 211 Contemporary World Literature  
 ENGL 215 Readings in Literature  
 ENGL 216 Readings in Narrative  
 ENGL 236/WMNS 236 Women in Literature  
 ENGL 241 Shakespeare's Plays  
 ENGL 291 Topics in Literature

#### Approved list G – Historical and cultural origins

ANTH 105 Introductory Archaeology  
 FRLG/INTL 203 Language and Identity  
 GEOG 312/ANTH 312 History of Human Settlement  
 HIST 101 Survey of European History I  
 HIST 102 Survey of European History II  
 HIST 105/AFAM 105 Survey of African History I  
 HIST 106/AFAM 106 Survey of African History II  
 HIST 107 Survey of Asian History I  
 HIST 108 Survey of Asian History II  
 HIST 109 Survey of Latin American History I  
 HIST 110 Survey of Latin American History II  
 PHIL 103 Ancient Greek and Medieval Western Philosophy  
 PHIL 104 Modern Western Philosophy  
 RELS 311 Religions of the World I  
 RELS 312 Religions of the World II

#### Approved list H – American studies (United States)

AMST 394 Perspectives in American Studies  
 FRLG/INTL 204 Language and Groups in the United States  
 HIST 103 Survey of American History I  
 HIST 104 Survey of American History II  
 POLI 103 U.S. Government  
 RELS 334 Religion in Contemporary America

#### Approved list I – Global studies

GEOG 307, 308 World Regions  
 INTL 101 Human Societies and Globalization  
 INTL 330/SOCY 330 Global Societies: Trends and Issues  
 POLI 105/INTL 105 International Relations  
 POLI 365/INTL 365 International Political Economy  
 SOCY 430 Politics, Power, and Ideology

#### Approved list J – Human behavior

ANTH/INTL 103 Cultural Anthropology  
 ECON 101 Introduction to Political Economy



ECON 203 Introduction to Economics  
 GEOG 102 Introduction to Cultural Geography  
 MASC 101 Mass Communications  
 PSYC 101 Introduction to Psychology  
 SOCY 101 General Sociology  
 SOCY 340 Self and Society  
 SOCS 340 Human Sexuality  
 WMNS 201 Introduction to Women's Studies

#### Approved list K – Urban environment

(See course descriptions in this bulletin for any prerequisites.)

ANTH 391 Topics in Anthropology: Urban Anthropology  
 CRJS 181 Justice System Survey  
 CRJS 305 Policing Theories and Practice  
 CRJS 352 Crime and Delinquency Prevention  
 CRJS 468 Economic Offenses and Organized Crime  
 ECON 321/URSP 321 Urban Economics  
 ENVS 491 Topics in Environmental Studies: Ecology of Urban Environments  
 FREN 301 Advanced Grammar and Writing  
 FRLG 490 Foreign Language Internship  
 GEOG 311, 312/ANTH 311, 312 History of Human Settlement  
 HIST 490 Seminar in History: Theater as History: Richmond During the Great Depression  
 HUMS 291 Special Topics in the Humanities and Sciences: Discover Richmond  
 HUMS 391 Science Education in the Urban Environment  
 MASC 303 General Assignment Reporting  
 MASC 403 Advanced Reporting  
 MASC 404 Specialized/Project Reporting  
 MASC 439 Public Relations Campaigns  
 MASC 464 Electronic Media Writing III  
 POLI 321 Urban Government and Politics  
 SLWK 422 Social Welfare Legislation and Services  
 SOCY 302 Contemporary Social Problems  
 SOCY 327 Urban Sociology  
 SPAN 402 Language Issues in the Spanish-Speaking World  
 URSP 116 Introduction to the City  
 URSP 245 Housing and Community Revitalization  
 URSP 261 Design of the City  
 URSP 302/GEOG 302 Land Use Capability  
 URSP 304 Urban Social Systems  
 URSP 306/GEOG 306 Urban Economic Geography  
 URSP 310 Introduction to Public Planning  
 URSP 315 The Evolution of American Cities  
 URSP 316 Urban Life in Modern America  
 URSP 340/GEOG 340/INTL 340 World Cities Outside of North America  
 URSP 350/INTL 345/EUCU 345 Culture and Urbanism in Great Cities of the World  
 URSP 541 Urban Public Policy-making Process  
 Selected fieldwork and internship courses. Check with department chair and the Schedule of Classes for approved courses.

#### Approved lists – Students entering prior to fall 1997

##### Approved list A – Expository writing

(See course descriptions in this bulletin for any prerequisites.)

ENGL 302 Legal Writing  
 ENGL 304 Advanced Composition  
 ENGL 327/MGMT 327 Business and Technical Report Writing  
 FREN 300, 301 Advanced Grammar and Writing  
 GRMN 300, 301 Advanced Grammar and Writing  
 MASC 303 General Assignment Reporting  
 MASC 333 Public Relations Writing  
 MASC 363 Electronic Media Writing I  
 MASC 392 Advertising Copywriting  
 SPAN 300, 301 Advanced Grammar and Writing  
 or  
 Two courses from other disciplines. See the Schedule of Classes each semester.

#### Approved list B – Literature in English or foreign literature in English translation or upper-level 300-400 foreign literature in the original language

(See course descriptions in this bulletin for any prerequisites.)

Please note that this requirement calls for one of the two courses chosen to be in a literature prior to 1900. Such courses will be shown with an asterisk.

Students who have not previously taken a high school or college-level literature survey course may wish to fulfill this requirement with a sophomore-level survey course such as ENGL 201 through 206. These courses will give students an extended survey of a number of works written over a relatively long period of time.

Students who have already taken survey courses may wish to fulfill this requirement with an upper-level course in English or foreign literature in English translation (FLET) or the original language excluding courses numbered 291, 391 or 491 and ENGL 351/TEDU 351. These courses will give students a more intensive experience with the literature of a particular age, genre or writer.

##### Literature in English (ENGL)

English courses at the 200 level are recommended. However, any upper-level (300-400) literature courses excluding courses numbered 291, 391 or 491 and ENGL 351/TEDU 351 offered by or cross listed with the Department of English (excluding writing and linguistics courses) may be used to fulfill the requirement. English courses covering literature prior to the 19th century are ENGL 201\*, 203\*, 205\*, 241\*, 320\*, 321\*, 322\*, 335\*, 361\*, 371\*, 372\*, 400\*, 401\*, 402\*, 403\*, 407\*, 409\*, 410\*, 411\*, 414\*, 415\*, 416\*, 423\* and 424.\*

##### Foreign literature in the original language

###### French (FREN)

330\*, 331 Survey of Literature  
 430\* The Middle Ages  
 431\* The 16th Century  
 432\* The 17th Century  
 433\* The 18th Century  
 434\* The 19th Century  
 435 The 20th Century

###### German (GRMN)

330\*, 331 Survey of Literature  
 416\* The Age of Goethe  
 417\* Intellectual Life and Culture in 19th Century Germany  
 420 The Turn of the Century  
 421 The Postwar German Scene

##### Spanish (SPAN)

330\* Survey of Spanish Literature  
 331\* Survey of Latin American Literature  
 430 Literary Genres  
 431\* Literary Periods  
 (If using 330, 331 or 431 as pre-19th century courses, check with instructor to see that major emphasis of course is prior to the 19th century.)

\* Course content prior to the 19th century.

#### Approved list C – European history

Bachelor of science students may choose any of the courses shown on Lists 1 and 2 below. Also, in the sequences shown below, the first course is not a prerequisite for the second course. For example, a student may take HIST 316 prior to HIST 315.

Bachelor of arts students must choose a sequence of courses from List 1. Bachelor of arts students may not use courses from List 2. Any two consecutively numbered courses from List 1 constitute a sequence. The two courses may be taken in any order.

##### History (HIST)

###### List 1

101, 102 Survey of European History  
 303 Greek Civilization  
 304 Roman Civilization  
 306 The Early Middle Ages  
 307/RELS 308 The High Middle Ages  
 308 Europe in Renaissance  
 309/RELS 309 The Reformation  
 310 Europe in Absolutism and Enlightenment, 1648-1815  
 311 The Zenith of European Power, 1815-1914  
 312 The Age of Total War: Europe, 1914-1945  
 313 Post-War Europe, 1945 to the Present

###### List 2

315, 316 History of France  
 317, 318 History of Germany  
 319, 320 History of England  
 321, 322 History of Russia  
 323 History of Spain and Portugal  
 325, 326/RELS 318, 319 History of the Jewish People  
 327/RELS 327 History of Christianity  
 329, 330 European Social History  
 331 Nazi Germany  
 336 Modern European Intellectual History  
 337 The Origins of Modernism, 1880-1930  
 338 History of Socialism

#### Approved list D – American history

Bachelor of science students may choose any of the courses shown on Lists 1 and 2 below. Also, in the sequences shown below, the first course is not a prerequisite for the second course. For example, a student may take HIST 352 prior to HIST 351.

Bachelor of arts students must choose a sequence of courses from List 1. Any two consecutively numbered courses from List 1 constitute a sequence. The two courses may be taken in any order.

## History (HIST)

**List 1**

- 103, 104 Survey of American History
- 342 Colonial America, 1585-1763
- 343 Two American Revolutions, 1763-1800
- 344 Antebellum America: 1800-1860
- 345 Civil War and Reconstruction
- 346 The Emergence of Modern America, 1877-1914
- 347, 348 20th Century U.S. History

**List 2**

- 349, 350 American Military History
- 351, 352 History of the South
- 355 History of Virginia
- 357, 358 American Social History
- 361, 362/AFAM 361, 362 Americans from Africa
- 363 History of the American Urban Experience
- 365, 366 American Intellectual History
- 369, 370 American Constitutional and Legal Development
- 374 History of the American Frontier
- 375, 376 American Diplomatic History

**Approved list E – European culture and heritage**

(See course descriptions in this bulletin for any prerequisites.)

## Art history (ARTH)

- 103, 104 Survey of Western Art

## European culture (EUCU)

- 311 Classical Mythology
- 345/INTL 345/URSP 350 Culture and Urbanism in Great Cities of the World

## French (FREN)

- 320, 321 French Civilization and Culture I, II

## Geography (GEOG)

- 307 World Regions
- 334 Regional Geography of Europe

## German (GRMN)

- 320, 321 German Civilization I, II

## History (HIST)

- 315, 316 History of France
- 317, 318 History of Germany
- 319, 320 History of England
- 321, 322 History of Russia
- 323 History of Spain and Portugal

## Italian (ITAL)

- 305 Italian Conversation and Civilization

## International studies (INTL)

- 345/EUCU 345/URSP 350 Culture and Urbanism in Great Cities of the World

- 352/POLI 352 European Government and Politics

- 354/POLI 354 Politics of the Former Soviet Union

## Philosophy (PHIL)

- 103 Ancient Greek and Medieval Western Philosophy
- 104 Modern Western Philosophy

## Political science (POLI)

- 352/INTL 352 European Governments and Politics
- 354/INTL 354 Politics of the Former Soviet Union

## Religious studies (RELS)

- 304 Introduction to Judaism
- 407 Modern Jewish Thought

## Spanish (SPAN)

- 320 Civilization of Spain I

## Urban Studies (URSP)

- 350/INTL 345/EUCU 345 Culture and Urbanism in Great Cities of the World

**Approved list F – Non-Western culture and heritage**

(See course descriptions in this bulletin for any prerequisites.)

## African-American studies (AFAM)

- 105, 106/HIST 105,106 Survey of African History
- 200/ANTH 200 Introduction to African Societies
- 204 Africa in Transition
- 333/GEOG 333 Geography of Africa
- 356/POLI 356/INTL 356 Government and Politics of Africa
- 357/POLI 357/INTL 357 Politics of Southern Africa
- 387/HIST 387 History of West Africa
- 388/HIST 388 Africa: Social, Cultural and Economic History
- 389/HIST 389 History of Southern Africa
- 392/HIST 392 The Caribbean to 1838
- 393/HIST 393 Akenaton to Cleopatra

## Anthropology (ANTH)

- 103 Cultural Anthropology
- 200/AFAM 200 Introduction to African Societies
- 301 The Evolution of Man and Culture
- 304/SOCY 304/WMNS 304 The Family
- 305 Comparative Society
- 350/INTL 350 Peoples and Cultures of the World
- 425 Religion, Magic and Witchcraft

## Geography (GEOG)

- 308 World Regions
- 333/AFAM 333 Geography of Africa

## History (HIST)

- 105, 106/AFAM 105,106 Survey of African History
- 107, 108 Survey of Asian History
- 109, 110 Survey of Latin American History
- 301, 302/RELS 315, 316 The Ancient Near East
- 328 Modern Middle East
- 378 History of Central America
- 379 The History of Modern Japan
- 381 The Qing Dynasty: 1644 - 1912
- 382 China: The 20th Century
- 384 Latin America and World Affairs
- 385 History of Mexico
- 386 History of Brazil
- 387/AFAM 387 History of West Africa
- 388/AFAM 388 Africa: Social, Cultural and Economic History
- 389/AFAM 389 History of South Africa
- 392/AFAM 392 The Caribbean to 1838
- 393/AFAM 393 Akhenaten to Cleopatra

## Philosophy (PHIL)

- 408/RELS 408 Indian Tradition
- 410/RELS 410 Chinese Tradition in Philosophy
- 412/RELS 412 Zen Buddhism

## Political science (POLI)

- 351/INTL 351 Governments and Politics of the Middle East
- 353/INTL 353 Latin American Governments and Politics
- 355/INTL 355 Asian Governments and Politics
- 356/AFAM 356/INTL 356 Government and Politics of Africa
- 357/AFAM 357/INTL 357 Politics of Southern Africa
- 452/INTL 452 Seminar in the Politics of Developing Areas

## Religious studies (RELS)

- 311 Religions of the World

- 315, 316/HIST 301, 302 The Ancient Near East
- 317 Islam
- 320 Taoism
- 408/PHIL 408 Indian Tradition
- 410/PHIL 410 Chinese Tradition in Philosophy
- 412/PHIL 412 Zen Buddhism

## Sociology (SOCY)

- 304/ANTH 304/WMNS 304 The Family

## Spanish (SPAN)

- 321 Latin American Civilization I

## Women's Studies (WMNS)

- 304/ANTH 304/SOCY 304 The Family

**Approved list G – Participatory and nonparticipatory arts**

Courses fulfilling this requirement are divided into participatory and nonparticipatory courses. Participatory courses are those primarily devoted to perfection of an artistic skill through studio work. Nonparticipatory courses are those primarily lecture and content oriented, with little or no studio work required, such as history of an art, art criticism, aesthetics or music appreciation.

## Participatory courses

## Art education (ARTE)

- 121-122 The Individual in the Creative Process
- 301 Art for Elementary Teachers
- 353 Art and Perceptual Communication
- 408 Two-Dimensional Arts Experiences
- 409 Three-Dimensional Art Experiences

## Art foundation (ARTF)

- 101-102 Conceptualization and Presentation
- 121-122 Introduction to Drawing

## Communication arts and design (CARD)

- 191 Studio Topics in Communication Arts and Design

## Crafts (CRAF)

- 201-202 Metalsmithing
- 211-212 Jewelry
- 221 Woodworking Techniques
- 241 Ceramics: Handbuilding
- 242 Ceramics: Wheelthrowing
- 251, 252 Introduction to Glassworking
- 261, 262 Beginning Textiles

## Dance and choreography (DANC)

- 105-106 Improvisation
- 111-112 Ballet Technique I
- 113 Ballet Technique I<sup>A</sup>
- 114 Summer Dance Workshop
- 121, 122/AFAM 121, 122 Tap Technique I
- 126, 127/AFAM 126, 127 African-Caribbean Dance I
- 141,142 Ballroom Dancing
- 171,172 T'ai Chi
- 183 Introduction to Modern Dance Technique
- 211-212 Ballet Technique II<sup>A</sup>
- 221 Tap Technique II
- 243 Dynamic Alignment
- 251 Jazz Technique II<sup>A</sup>
- 311-312 Ballet Technique III<sup>A</sup>
- 313 Dance in World Cultures\*
- 319, 320 Video/Choreography Workshop<sup>†</sup>
- 343 Body Imagery\*

- \* Recommended for upper-level students; dance experience not required.  
 † Recommended for upper-level students with some experience in dance, film, video or photography.  
 Δ Open to non-dance majors who pass placement audition.

## English (ENGL)

- 305 Creative Writing: Genres  
 426/THEA 426 Advanced Playwriting  
 435 Advanced Poetry Writing  
 437 Advanced Fiction Writing

## Interior design (IDES)

- 103-104 Introductory Studio Course

## Music (APPM)

- 191-192 Class Lessons in Piano  
 193 Class Lessons in Voice  
 195 Class Lessons in Guitar  
 300-level Private Instruction: Principal and Secondary Performing Mediums  
 370 Large Ensembles\*  
 390 Small Ensembles†

## Music history, literature and theory (MHIS)

- 105-106 Introduction to Writing Music  
 120 Introduction to Musical Styles  
 243 Music Appreciation  
 250/AFAM 250 Introduction to African-American Music  
 280 Survey of 20th Century American Popular Music  
 350/AFAM 350 Studies in the Music of the African Continent and Diaspora

## Music composition (MUSC)

- 111 MIDI Programming and Synthesis  
 112 Synthesizer and Composition

- \* Auditions required for Orchestra, University Band, Symphonic Wind Ensemble, Commonwealth Singers. No audition required for Choral Arts Society.

- † Audition required.

## Painting and printmaking (PAPR)

- 155, 156 Drawing and Painting, Basic

## Photography and film (PHTO)

- 233 Media Arts Survey  
 243-244 Photography  
 245 Design Photography I  
 301 Mass Communications Photography  
 305-306 The Zone System\*  
 341, 342 Concepts in Photography  
 345 Design Photography II\*  
 350 Intermediate Photography\*

- \* Prerequisite required.

## Sculpture (SCPT)

- 209 Introduction to Sculpture

## Theatre (THEA)

- 103 Stagecraft  
 104 Costume Construction  
 107, 108 Introduction to Stage Performance  
 221 Basic Scene Design  
 229 Introduction to Lighting Design  
 325 Stage Management

## Nonparticipatory courses

## Art history (ARTH)

- 103, 104 Survey of Western Art  
 145, 146 Survey of Oriental Art  
 207 Introduction to Non-Western Art  
 270, 271 History of the Motion Picture  
 300 Prehistoric and Ancient Art and Architecture  
 301 Art and Architecture of Ancient North America  
 305 Classical Art and Architecture  
 315 Renaissance Art and Architecture  
 316 Northern Renaissance Art and Architecture  
 317, 318 History of Architecture  
 320 Baroque and Rococo Art and Architecture  
 325 19th Century Art and Architecture  
 330 20th Century Art and Architecture  
 442 Architecture in Richmond  
 443 Folk Art of the United States  
 444 Studies in the Art of the United States  
 445 The Art of India  
 447 The Art of Southeast Asia  
 449 Studies in Asian Art  
 450 Art and Architecture of Mesoamerica  
 451 Art and Architecture of Andean America  
 452 Studies in Pre-Columbian Art and Architecture  
 454 Studies in African and Oceanic Art  
 455 Aesthetics and Modern Theories of Art  
 456 Ideas and Criticism in Art  
 457/WMNS 457 Women, Art and Society  
 459 Studies in Aesthetics, Theory, and Criticism of Art  
 470 History of Animated Feature Film  
 471 Film Theory  
 472 History of Photography  
 474 Studies in Film  
 489 Topics in Advanced Art History

## Communication arts and design (CARD)

- 252 20th Century Visual Communications I

## Dance and choreography (DANC)

- 308 Dance History

## Fashion design and merchandising (FASH)

- 290 Textiles for the Fashion Industry  
 319 20th Century Fashions

## Interior design (IDES)

- 251, 252 Design in Historic Interiors and Architecture I, II

## Music history, language and theory (MHIS)

- 380 Survey of Music the Industry

## Photography and film (PHTO)

- 374 Film Preproduction and Postproduction

## Theatre (THEA)

- 211-212 Introduction to Drama  
 300 The Enjoyment of Theatre  
 303/AFAM 303 Black Theatre  
 307-308 History of the Theatre  
 309, 310 History of Costumes  
 403, 404 History of Dramatic Literature

## Approved list H – Ethics

(See course descriptions in this bulletin for any prerequisites.)

## Mass communications (MASC)

- 290 Ethical Problems in Mass Media

## Philosophy (PHIL)

- 211 History of Ethics

## 212 Ethics and Applications

## 213 Ethics and Health Care

## 327 Ethical Theory

## Political science (POLI)

- 341 History of Political Thought

## Religious studies (RELS)

- 340 Global Ethics and the World's Religions

## Approved list J – Human behavior and institutions

(See course descriptions in this bulletin for any prerequisites)

## African-American studies (AFAM)

- 103 Introduction to African-American Studies  
 104/SOCY 104 Sociology of Racism  
 305/SOCY 305/WMNS 305 Sociology of the Black Family  
 307/RELS 307 Black Religion  
 318/POLI 318/WMNS 318 Politics of Race, Class and Gender  
 322/PSYC 322 Personality and Behavior of the African American  
 343/POLI 343 Black Political Thought

## Anthropology (ANTH)

- ANTH 103 Cultural Anthropology is a prerequisite for many ANTH courses and is recommended as the basic course. With completion of any prerequisites, the following are recommended:  
 301 The Evolution of Man and Culture  
 311/GEOG 311 History of Human Settlement  
 350/INTL 350 Peoples and Cultures of the World

## Economics (ECON)

- 203 Introduction to Economics  
 210-211 Principles of Economics  
 With completion of prerequisites, the following are recommended:  
 306 Public Finance - Federal  
 321/URSP 321 Urban Economics  
 421 Government and Business  
 431 Labor Economics

## Educational studies (EDUS)

- 300 Foundations of Education  
 301 Human Development and Learning

## Geography (GEOG)

- 102 Introduction to Cultural Geography  
 311, 312/ANTH 311, 312 History of Human Settlement  
 322 World Political Geography

## Political science (POLI)

- 103 U.S. Government and 201 Introduction to Politics are recommended as basic courses. However, all political science courses may be used to fulfill this requirement excluding the following: POLI 320, 331, 334, 432, 448, 494, 498, and 499.

## Psychology (PSYC)

- 101 Introduction to Psychology is a prerequisite for all upper-level psychology courses and is recommended as the basic course. With the completion of this prerequisite, all psychology 300 and 400-level courses may be used to fulfill this requirement excluding the following courses: PSYC 317, 318, 451, 492, and 498-499.

## Religious studies (RELS)

- 101 Introduction to Religious Studies  
 301 Introduction to the Old Testament  
 302 Introduction to the New Testament  
 307/AFAM 307 Black Religion  
 311, 312 Religions of the World

334 Religion in Contemporary America

360/SOCY 360 Sociology of Religion

#### Sociology (SOCY)

101 General Sociology is a prerequisite for many sociology courses and is recommended as the basic course. With the completion of any prerequisites, all sociology courses may be used to fulfill this requirement excluding the following courses: SOCY 320, 421, 492, and 493.

#### Social sciences (SOCS)

303 Marriage and Family Relationships

330 The Psychology and Sociology of Death

340 Human Sexuality

#### Women's studies (WMNS)

201 Introduction to Women's Studies

304/ANTH 304/SOCY 304 The Family

305/AFAM 305/SOCY 305 Sociology of the Black Family

318/AFAM 318/POLI 318 Politics of Race, Class and Gender

333/SOCY 333 Sociology of Sex and Gender

334/SOCY 334 Sociology of Women

335/PSYC 335 Psychology of Women

## Humanities and Sciences Undeclared Program

### Exploratory programs for students with an undeclared major

**Marcia Zwicker**

Coordinator

For those students seeking admission to VCU who have not declared their major at the time of their acceptance or enrollment, the university recommends that these students enroll in the College of Humanities and Sciences. Students admitted into the "Humanities and Sciences Undeclared" category are encouraged to select a major by the end of two years of study. Students must declare a major within one of the university's schools no later than the semester in which they complete 60 credits. The advising program is flexible enough to suit the interests of any student with an undeclared major, yet the courses recommended are basic to a variety of majors.

The student with an undeclared major is assigned an adviser in the Office of Academic Advising with whom the student must meet at least once prior to advanced registration each semester. Adviser and student assess the general academic direction of the student's interests and then plan a program of studies to assist the student in defining his or her academic objectives more clearly.

The following lists are of freshman- and sophomore-level courses from which undeclared students can choose to explore various fields.

As students who have not declared their majors begin to make decisions about a major, they should consult this bulletin for that major's specific course requirements that should be taken in the freshman and sophomore years.

### Suggested courses for the College of Humanities and Sciences for students with undeclared majors among various schools

#### A. Most transferable courses

BIOL 151, 152 and 151L, 152L Introduction to Biological Sciences and Laboratories I, II (science majors)  
 BIOL 101, 101L Life Science and Laboratory (non-science)  
 BIOL 102, 102L Science of Heredity and Laboratory (non-science)  
 BIOL 103/ENVS 103, 103L Environmental Science and Laboratory (non-science)  
 CHEM 101-102 and 101L-102L General Chemistry and Laboratory I, II (science majors)  
 CHEM 110, 110L Chemistry and Society and Laboratory (non-science)  
 ENGL 101-200 Composition and Rhetoric I-II  
 ENGL 201 Western World Literature I  
 ENGL 202 Western World Literature II  
 ENGL 203 British Literature I  
 ENGL 204 British Literature II  
 ENGL 205 American Literature I  
 ENGL 206 American Literature II  
 HIST 101, 102 Survey of European History  
 HIST 103, 104 Survey of American History  
 MATH 131 Introduction to Contemporary Mathematics (placement test required)  
 MATH 151 Precalculus Mathematics (placement test required)  
 PHYS 107 Wonders of Technology (non-science)  
 PHYS 207-208 and 207L, 208L University Physics and Laboratories (science majors)  
 POLI 105/INTL 105 International Relations  
 PSYC 101 Introduction to Psychology  
 SOCY 101 General Sociology  
 SPCH 121 Effective Speech

#### B. Second level of most transferable courses

AFAM 103 Introduction to African-American Studies  
 ARTH 103, 104 Survey of Western Art  
 PHIL 103 Ancient Greek and Medieval Western Philosophy  
 PHIL 104 Modern Western Philosophy  
 PHIL 221 Critical Thinking  
 PHIL 222 Logic  
 POLI 103 U.S. Government

#### If school is probably School of the Arts

(see Part X for additional information)  
 APPM 300-Level Private Instruction  
 APPM 165, 166 Aural Skills I, II  
 APPM 191-192 Class Lessons in Piano  
 APPM 193-194 Class Lessons in Voice

APPM 195-196 Class Lessons in Guitar  
 APPM 197-198 Class Lessons in Organ  
 APPM 370 Large Ensembles  
 APPM 390 Small Ensembles  
 ARTF 121-122 Introduction to Drawing  
 ARTH 103, 104 Survey of Western Art  
 CRAF 201-202 Metalsmithing  
 CRAF 211-212 Jewelry  
 CRAF 241 Ceramics: Handbuilding  
 CRAF 242 Wheelthrowing  
 CRAF 261, 262 Beginning Textiles  
 ENGL 101-200 Composition and Rhetoric I, II  
 FASH 240 Survey of the Fashion Industry I  
 FASH 290 Textiles for the Fashion Industry  
 FASH 319 20th Century Fashions  
 IDES 103-104 Introductory Studio Course  
 IDES 211 Introduction to Interior Design  
 MHIS 105-106 Introduction to Writing Music  
 MHIS 117 Computers in Music  
 MHIS 201 Acoustics  
 PAPR 155, 156 Drawing and Painting, Basic  
 PAPR 255-256 Drawing and Painting, Basic  
 PAPR 355, 356 Drawing and Painting, Intermediate  
 THEA 307-308 History of the Theatre

#### If college is probably College of Humanities and Sciences

(see Part VIII for additional information)  
 ANTH 103 Cultural Anthropology  
 ENGL 101-200 Composition and Rhetoric I-II  
 Foreign Language (placement test required if continuing in high school language)  
 HIST 101, 102 Survey of European History  
 HIST 103, 104 Survey of American History  
 HIST 105, 106/AFAM 105, 106 Survey of African History  
 HIST 107, 108 Survey of Asian History  
 HIST 109, 110 Survey of Latin American History  
 Natural science – One biological science course and one physical science course with a laboratory in one of the two. PHYS 103 Elementary Astronomy, PHYS 107 Wonders of Technology, PHYS 101 Foundations of Physics, CHEM 110 Chemistry and Society, BIOL 151 Introduction to Biological Sciences (if planning biology major), BIOL 101 Life Science, BIOL 102 Science of Heredity, BIOL/ENVS 103 Environmental Science, CHEM 101 General Chemistry and laboratory (for science majors)  
 MATH 131 Introduction to Contemporary Mathematics or MATH 151 Precalculus Mathematics (placement test required)  
 PHIL 103 Ancient Greek and Medieval Western Philosophy  
 PHIL 104 Modern Western Philosophy  
 POLI 103 U.S. Government  
 POLI 201 Introduction to Politics  
 PSYC 101 Introduction to Psychology  
 RELS 101 Introduction to Religious Studies  
 SOCY 101 General Sociology

#### If school is probably School of Business

(see Part XI for additional information)  
 ACCT 203-204 Introduction to Accounting  
 ECON 210-211 Principles of Economics

ENGL 101-200 Composition and Rhetoric I-II  
 MGMT 121 The Business Environment  
 MGMT 171 Mathematical Applications for Business  
 (placement test required and MATH 141 may be  
 required as prerequisite)  
 MGMT 212 Differential Calculus and Optimization  
 for Business (placement test required)  
 SPCH 121 Effective Speech  
 Elective in history or political science  
 Elective in a natural science  
 Elective in sociology, psychology or anthropology  
 Elective in the arts

#### If school is probably School of Education

(see Part XIII for additional information)  
 BIOL 101, 101L Life Science and Laboratory  
 CMSC 128 Computer Concepts and Applications  
 ENGL 101-200 Composition and Rhetoric I-II  
 English 200-level literature  
 HIST 103 Survey of American History  
 HLTH 190/PHED 190 History and Philosophy of  
 Physical Education  
 MATH 131 Introduction to Contemporary Mathematics  
 or MATH 141 Algebra with Applications  
 PSYC 101 Introduction to Psychology  
 SOCY 101 General Sociology  
 SPCH 121 Effective Speech  
 STAT 208 Statistical Thinking

#### If school is probably School of Social Work

(see Part XIX for additional information)  
 ANTH 103 Cultural Anthropology  
 BIOL 101, 101L Life Science and Laboratory  
 ENGL 101-200 Composition and Rhetoric I-II  
 MATH 131 Introduction to Contemporary Mathematics  
 or MATH 141 Algebra with Applications  
 PSYC 101 Introduction to Psychology  
 STAT 208 Statistical Thinking or  
 STAT 210 Basic Practice of Statistics  
 SOCY 101 General Sociology  
 Social/behavioral science electives, six credit hours  
 (political science, economics, history)  
 Electives, six credit hours

### Undergraduate credit by examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the college provides students limited opportunities to accelerate their education through "credit by examination." A full description of this program appears in Part II of this bulletin.

### University Honors Program

The VCU Honors Program, a challenging and exciting program with high academic standards, was established to meet the needs of academically talented undergraduate students. The University

Honors Program offers students the opportunity to expand their creative and intellectual horizons. Students in this program benefit from small classes which promote greater interaction between students and faculty and among the students themselves.

Undergraduates from the college and all other schools on VCU's Academic Campus are invited to apply to this program, if they meet eligibility requirements. For a detailed description of qualifications and requirements, see Part II of this bulletin.

### Course descriptions and numbering

Courses designated 100 and 200 are undergraduate lower-level courses offered primarily to undergraduate students; 300 and 400 courses are undergraduate upper-level courses designed for advanced undergraduates.

Courses at the 500 level are open to advanced undergraduate students with the consent of the department offering the course. Credit is applicable to only one degree.

### Bachelor of Interdisciplinary Studies (B.I.S.) and Special Nondegree-seeking Student Advising

#### Sherry B. Mikuta, Director

B.S. 1969 Virginia Polytechnic Institute and  
 State University  
 M.B.A. 1982 Virginia Commonwealth University

#### Dorothy E. Fillmore, Coordinator, B.I.S.

B.A. 1977 St. Andrews Presbyterian College  
 M.A. 1984 Virginia Commonwealth University

#### Ronald X. Peterson, Coordinator, CLEP

B.A. 1974 Virginia Union University  
 M.Ed. 1979 Virginia State University

This university degree program is designed for students who have clearly articulated goals that cannot be met by existing university programs. It offers flexible schedules and highly individualized curricula leading to a bachelor of interdisciplinary studies (B.I.S.).

Through individualized advising, this program helps students define their educational goals and design their interdisciplinary curricula by drawing on a variety of course offerings.

B.I.S. degree programs are available both on and off campus. To earn a B.I.S.

degree, students must complete at least 120 credits with at least a 2.0 cumulative GPA. Forty-five of those credits must be upper-division credits.

#### Program requirements

##### General education 35-43 hours

- |   | credits |
|---|---------|
| 1. <b>Communicating</b>   | 12-15   |
| Six hours Composition and Rhetoric (e.g., ENGL 101-200 by course or placement with a minimum grade of "C" in each course or demonstrated competence). Two Writing Intensive courses, one of which preferably is in the Focus area. Three hours in Speech or Communications (e.g., SPCH 121 or 321; SLWK 230; PSYC 323, 340, 341; RECR 195) or transfer credit which includes a course emphasizing oral communication. |         |
| 2. <b>Ethics</b>  | 3       |
| Completion of an ethics course (e.g., PHIL 211, 212, 213, MASC 290, RELS 340, SOCY 445, or POLI 341) or transfer credit which includes a course emphasizing ethics.   |         |
| 3. <b>Quantity and form</b>   | 6       |
| Must include college algebra or its equivalent (e.g., MATH 131) plus an additional course from mathematics, logic, computer science or statistics.  |         |
| 4. <b>Science and technology</b>  | 3-4     |
| Completion of a course in science which includes a laboratory experience.   |         |
| 5. <b>Visual and performing arts</b>  | 2-3     |
| Completion of a course which includes a participatory component or explores the historical, cultural, aesthetic and creative development of the arts.   |         |

- |   |      |
|---|------|
| 6. <b>Humanities and social sciences and interdependence</b>  | 9-12 |
| Completion of three courses to be distributed as follows: three hours in Humanities (e.g., literature, religious studies, history, philosophy); three hours in American, European or non-Western culture; three hours in social sciences (e.g., psychology, sociology, social sciences, economics, political science, African-American studies, anthropology, geography, women's studies, social work). One of the three courses must have an international or global emphasis. |      |

**Focus area.** The individually designed interdisciplinary focus area requires a minimum of 36 semester hours of credit, including at least 24 semester hours of upper-level credit.

**Electives.** Maximum of 52 credits.

**Other requirements.** For degree completion at least 25 percent of credit semester hours must be earned through instruction at VCU.

The last 30 hours of credit must be taken at VCU or 15 may be taken at VCU

and 15 from other approved institutions in the area when there is no equivalent VCU course. At least 24 hours must be taken after acceptance into the program; 12 of these must be in the focus area. Twenty-one of the junior/senior-level hours must be from VCU. No more than 60 semester credits may be from a two-year college, and B.I.S. students may have no more than 30 hours of business courses, including transfer courses.

To enter the program, students must: attend one orientation session (call to schedule an appointment); have a goal that cannot be met by another degree program at VCU; have a minimum of 30 semester hours of college credit; have a minimum GPA of 2.0.

Students admitted to the B.I.S. program have a variety of credit options, including CLEP examinations, credit for formal military training and credits for certain professional certifications when they do not duplicate college course work.

This office also serves as the entry point for special (or nondegree seeking) students who wish assistance in accessing the university. Such students should call (804) 828-8420 for further information or to schedule an advising appointment.

For additional information about B.I.S., CLEP or special nondegree-seeking student advising, contact the Office of Bachelor of Interdisciplinary Studies and Special Nondegree-seeking Student Advising, Virginia Commonwealth University, 310 N. Shafer St., Richmond, VA 23284-3079, (804) 828-8420.

## School of Mass Communications

### Vacant

Associate Director, School of Mass Communications - Advertising and Public Relations Concentrations

### L. Terry Oggel

Associate Director, School of Mass Communications - Electronic Media and News-Editorial Concentrations and Professor, Department of English (1988)  
B.A. 1961 Monmouth College  
M.A. 1963 Kent State University  
Ph.D. 1969 University of Wisconsin

Campbell Jr., John W., (1995) Assistant Professor  
B.S. 1987 and M.S. 1989 Virginia Commonwealth University  
Chumley, Timothy H. (1994) Assistant Professor,  
VCU Adcenter  
B.F.A. 1983 Southern Methodist University

Cook-Tench, Diane M. (1991) Associate Professor and Director, VCU Adcenter  
B.F.A. 1976 Minneapolis College of Art and Design  
Cotzias, Constantin G. (1996) Associate Professor  
B.A. 1975 Gettysburg College  
M.B.A. 1977 New York University  
Donohue, Thomas R. (1989) Professor  
B.A. 1967 and M.A. 1968 Bowling Green State University  
Ph.D. 1972 University of Massachusetts, Amherst  
Faison, Brenda Smith (2000) Associate Professor  
B.A. 1980 North Carolina Central University  
M.P.D. 1984 North Carolina State University  
Ph.D. 1995 The Ohio State University  
Kennamer, J. David (1982) Associate Professor and Director of International and Area Studies Program  
B.A. 1972 and M.A. 1978 University of Kentucky  
Ph.D. 1982 University of Wisconsin  
Looney, James R. (1964) Associate Professor  
B.S. 1962 East Tennessee State University  
M.S. 1965 Virginia Commonwealth University  
Nelson, Terri (1998) Instructor  
B.A. 1982 and M.A. 1985 West Virginia University  
Nicholson, June Orr (1984) Associate Professor  
B.A. 1968 University of North Carolina, Chapel Hill  
M.A. 1979 American University  
Otto, Paula I. (1998) Instructor  
B.S. 1983 West Virginia University  
M.A. 1997 American University  
Smith, Ted J., III (1987) Associate Professor  
B.A. 1971, M.A. 1972 and Ph.D. 1978 Michigan State University  
Thomas, Clarence W. (1991) Associate Professor  
B.A. 1976 Hampton Institute  
M.S. 1977 Syracuse University  
Ph.D. 1990 University of Florida  
Wirt, Wilma H. (1987) Associate Professor  
B.A. 1958 Oklahoma State University  
M.A. 1977 University of Texas

### Emeriti faculty

Arnold, Edmund C., Professor Emeritus  
A.B. Michigan State University  
L.H.D. Hartwick College

The School of Mass Communications prepares students for careers in the mass media and related fields and encourages high standards of ethical and journalistic performance. The prescribed courses in the school provide a broad educational base and instruct the students in the techniques of mass communications.

The School of Mass Communications offers a bachelor of science degree in mass communications with specialization in four sequences.

The **News-Editorial Sequence** is designed primarily for students planning careers in newspaper writing or editing.

The **Advertising Sequence** prepares students for careers in advertising departments of manufacturers and retailers, advertising agencies and advertising media, and advertising service organizations. Students choose one of two tracks — business or creative.

The **Public Relations Sequence** is designed to prepare students for employment in industry, government, nonprofit associations and public relations agencies.

The **Electronic Media Sequence** prepares students for careers in electronic journalism or production.

## Degree requirements

**Bachelor of science in mass communications.** The bachelor of science curriculum in mass communications requires a minimum of 120 credits with at least 33 but no more than 36 credits in the major field. In addition, students must earn a total of 45 credits in 300- and 400-level classes, including upper-level mass communications course work. A cumulative and major GPA of 2.25 is required to graduate from the mass communications program. The school is divided into a lower division (freshman and sophomore) and an upper division (junior and senior).

Three courses in the major — MASC 101 Mass Communications, MASC 203 Newswriting, and MASC 290 Ethical Problems in Mass Media — may be taken in the lower division.

To enroll in MASC 203, students must successfully complete a language skills test and type at least 35 words per minute. Proof of typing skills are established by examination or completion of a college-level typing course with a grade of "C" or better.

Admittance to the upper level is contingent on meeting the following requirements: a GPA of at least 2.25 in all courses, completion of MASC 101, MASC 203 and MASC 290 with at least a grade of "C," and completion of the following courses: ENGL 101-200, HIST 103, 104, ECON 210-211, MATH 131 and STAT 208 or 210, POLI 103, completion of the college laboratory science requirement, and a foreign language (six to eight credits).

Certification of these requirements must accompany a formal petition for admission to the upper division of this program. At that time the student must

select an area of specialization in mass communications.

**To enroll in a mass communications course, majors must have earned at least a "C" in all courses prerequisite for that course.**

Transfer students with junior standing admitted to VCU are placed on one-semester probation to establish the required GPA before admission to the upper division.

Students admitted to the upper division must choose one of the following concentrations:

#### Advertising

MASC 300 Media Graphics  
MASC 380 Introduction to Advertising  
MASC 392 Advertising Copywriting  
MASC 481 Advertising Campaigns

#### Business track

MASC 408 Communications Law  
MASC 480 Media Strategy  
MASC 493 Fieldwork/Internship  
MASC Writing Elective (3 credits)  
MASC Elective (3 credits)

#### Creative track

MASC 393 Creativity for Television  
MASC 394 Advertising Layout and Production  
MASC 450 Advertising Portfolio Development  
MASC Electives (4-6 credits)

#### Public relations

MASC 300 Media Graphics  
MASC 323 Public Relations  
MASC 333 Public Relations Writing  
MASC 335 Public Relations Presentations  
MASC 408 Communications Law  
MASC 425 Public Relations Research  
MASC 439 Public Relations Campaigns  
MASC 493 Fieldwork/Internship (1-3 credits)  
MASC elective\* (3 credits)

\* Recommended elective – MASC 380 Introduction to Advertising

#### News-editorial

MASC 300 Media Graphics  
MASC 303 General Assignment Reporting  
MASC 305 Copy Editing  
MASC 375 Legislative Reporting  
MASC 405 Advanced Editing  
MASC 408 Communications Law  
MASC electives (3-6 credits)

And choose six credits from the following:

MASC 403 Advanced Reporting  
MASC 404 Specialized/Project Reporting  
MASC 475 Capital News Service

#### Electronic media

MASC 361 History and Development of Broadcasting  
MASC 363 Electronic Media Writing I  
MASC 365 Radio Production  
MASC 366 Television Production  
MASC 408 Communications Law  
MASC 463 Electronic Media Writing II  
MASC 464 Electronic Media Writing III  
MASC 493 Fieldwork/Internship (1-3 credits)

And choose four to nine credits from the following:

MASC 362 Newscasting  
MASC 393 Creativity for Television  
MASC 414 Advanced Radio Production  
MASC 415 The Television Studio: Advanced Television Production  
MASC 461 The Documentary  
MASC 492 Independent Study

#### Collateral requirements

In addition to mass communications courses and the collateral courses for the tracks listed below, students must take the following:

Any two history courses  
Any two literature courses  
CMSC 128 Computing Applications and Concepts  
One three-credit course from the following:  
POLI 303 Political Attitudes and Behavior  
POLI 310 Public Policy  
POLI 311/ENVS 311 Politics of the Environment  
POLI 314 U.S. Constitutional Law  
POLI 315 U.S. Judicial Policy Making  
POLI 321 Urban Government and Politics  
POLI 322 State and Local Government and Politics  
POLI 331 Public Administration  
POLI 341 History of Political Thought  
POLI 365/INTL 365 International Political Economy  
POLI 409 Continuity and Change in American Politics  
POLI 420 Seminar in Urban Politics  
POLI 425 Public Policy in the States  
URSP 304 Urban Social Systems  
URSP 310 Introduction to Public Planning  
URSP 315 The Evolution of American Cities  
URSP 316 Urban Life in Modern America  
URSP 340/GEOG 340/INTL 340 World Cities Outside of North America  
URSP 350/EUCU 345/INTL 345 Culture and Urbanism in Great Cities of the World

**Collateral requirements for the tracks include the following:**

#### Advertising

MRBL 308 Introduction to Marketing

#### Public relations

ACCT 202 Accounting for Non-Business Majors  
MRBL 308 Introduction to Marketing  
MGMT 319 Organizational Behavior

#### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing an undergraduate degree in mass communications. A full description of the program appears in Part XX of this bulletin.

#### Courses in mass communications (MASC)

##### MASC 101 Mass Communications.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. A broad survey of mass media, with emphasis on new media, global media and the business of media as traditional lines blur among journalism, advertising and public relations. The history and evolution of mass media are examined. Emphasis is given to mass media law and ethics, including the origins and evolution of a free press and the legal framework of contemporary mass media practice.

##### MASC 181 Principles of Advertising.

Semester course; 3 lecture hours. 3 credits. Not open to mass communications majors. A survey of all forms of advertising; principles of layout copy; production methods; campaign preparation; media selection.

##### MASC 203 Newswriting.

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: MASC 101, ENGL 101, sophomore standing, typewriting proficiency of 35 words per minute and successful completion of a language skills test. Students must obtain permission to register from the School of Mass Communications office. Study and practice in fact gathering and development of the basic skills needed for writing for the media. Focus on newspaper writing stressing grammar skills.

**MASC 101 and MASC 203 are prerequisites for the following courses.**

##### MASC 290 Ethical Problems in Mass Media.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 or permission of school. Examination and analysis of contemporary issues and problems in conventional and new media. The philosophical foundation and principles of ethical decision making are explored. Critical and unresolved issues are discussed within the legal and ethical framework of modern mass media practice. Students are required to design and justify resolutions to the issues and present defenses for the resolution proposals.

##### MASC 300 Media Graphics.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. A course on the functions of visual and graphic communication in the print and electronic media. Course focuses on creative typographic and layout design, editing, pictures, and nonverbal elements of communications and perception, and integrates computer software packages such as PageMaker, Quark and others.

**MASC 303 General Assignment Reporting.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. Detailed study in gathering and reporting facts, with emphasis on clarity and maturity of writing. The intent is to build skills in interviewing, to provide practice in writing general news and features, and to prepare for entry-level reporting assignments.

**MASC 305 Copy Editing.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MASC 101, MASC 203 and MASC 300. For mass communications majors only. Instruction and practice in basic newspaper editing with a focus on practical experience in editing local and news service copy for publication. Includes emphasis on headline writing, development of news judgment, accuracy and fairness while exposing students to legal problems confronting a copy editor. Some attention will be paid to layout and design of newspapers.

**MASC 323 Public Relations.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. Study of public relations principles and practices, including analysis of tools, media, ethical responsibilities and emerging technologies. Special attention to the theory and research literature on rational and ethical persuasion.

**MASC 333 Public Relations Writing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101, MASC 203 and MASC 323. For mass communications majors only. An intensive writing course focusing on researching and writing materials in support of the public relations function. Practice in preparing materials for controlled and uncontrolled media, both print and broadcast, including news releases, interview protocols, special events background materials, media kits, employee newsletters, community relations materials and formal public speaking scripts. Explores routine, special event and crisis situations, and the link between written and audiovisual documents.

**MASC 335 Public Relations Presentations.**

Semester course; 2 lecture and 1 laboratory hour. 2 credits. Prerequisite: MASC 101, MASC 203 and MASC 333. For mass communications majors only. Instruction and practice in broadcast and computerized public relations production methods, and special events planning and implementation.

**MASC 341 Feature and Article Writing.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MASC 101 and MASC 203 and MASC 303 or 363 or permission of instructor. For mass communications majors only. Practice in preparing articles and features for newspapers and magazines. Emphasis is on creative journalistic writing and development of writing skills.

**MASC 361 History and Development of Broadcasting.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. An examination of the regulatory, technical, economic and creative foundations of the broadcast media. Historical, contemporary, and ethical issues in broadcasting also are addressed.

**MASC 363 Electronic Media Writing I.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. Corequisites: MASC 363 to be taken concurrently with MASC 365 and MASC 366. For mass communications majors only. Students will concentrate on developing writing and reporting skills for radio and television. Weekly writing assignments. Students will write the following for radio: a wrap, a person on the street, a two-part series. Students will write the following for television: an anchor voice over, a voice over sound on tape, and a package with reporter stand-up.

**MASC 365 Radio Production.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. Students will learn the purpose, function, and execution of basic techniques of radio and audio field and studio production operations. Emphasis will be placed on the production of broadcast-quality audition tapes. Fieldwork production, remote production, and live production. Radio production, organization structure, individual roles, and the one-person newsroom will also be covered.

**MASC 366 Television Production.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. Students will learn the purpose, function and execution of basic techniques of television and video field and studio production operations. Emphasis will be placed on the production of broadcast-quality audition tapes. Fieldwork production, remote production, live production. Television production, organizational structure, individual roles and the one-person television crew also will be covered.

**MASC 375 Legislative Reporting.**

Semester course; 1 laboratory hour. 1 credit. Prerequisite: MASC 101, MASC 203 and MASC 303 or 363. For mass communications majors only. Concentrated five-week course to permit advanced students to gain reporting experience with the Virginia General Assembly.

**MASC 380 Introduction to Advertising.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. An overview of the advertising industry. A practitioner-oriented approach to the creation, preparation, and evaluation of advertising. The course views the subject from an advertising management perspective.

**MASC 391 Newspaper Advertising.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. A course in the preparation, placing, and proofing of advertising in daily and weekly newspapers. Its aim is to improve the appearance, effectiveness, and originality of newspaper advertising. Some attention is given to the organization and management of the advertising function in newspapers.

**MASC 392 Advertising Copywriting.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101, MASC 203 and MASC 380. For mass

communications majors only. Study of the different types of advertising copy used by both local and national advertisers. Practice in writing consumer, trade, and industrial copy.

**MASC 393 Creativity for Television.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101, MASC 203 and MASC 380. For mass communications majors only. Learn the process of developing professional-level television advertising with a concentration in creative thinking and solutions. Students create TV commercials with attention to scripts, storyboards, talent, visual composition, editing, music, sound effects and direction.

**MASC 394 Advertising Layout and Production.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101, MASC 203, MASC 300 and 380. For mass communications majors only. Study and practice in layout and design of advertising for all media. Ideas will be followed through from concept to production.

**MASC 403 Advanced Reporting.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MASC 101, MASC 203 and MASC 303. For mass communications majors only. Intensive study of the techniques of reporting meetings and news of public affairs. Attention will be paid to covering governmental agencies at all levels. Quality of writing will be a paramount and continual consideration.

**MASC 404 Specialized/Project Reporting.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: MASC 101, MASC 203 and MASC 403. For mass communications majors only. An advanced course to provide news beat experience for students reporting on complex issues facing the public in the urban community. Emphasis also on team reporting, in-depth research and interviewing techniques, and use of public records.

**MASC 405 Advanced Editing.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisite: MASC 101, MASC 203 and MASC 305. For mass communications majors only. An advanced course in editing to prepare students for work on copy desks and news desks of daily newspapers. Emphasis on fine points of editing and the layout of newspaper pages.

**MASC 408 Communications Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. Study of legal limitations affecting publishing, advertising, broadcasting, and telecasting and legal philosophy and ethics relating to the media of communications.

**MASC 414 Advanced Radio Production.**

Semester course; 3 laboratory hours. 1 credit. Prerequisite: MASC 101, MASC 203 and MASC 365. For mass communications majors only. Documentary soundtrack production, multitrack production, music production for radio and television. Digital audio workstations. Audio and related electronic media computer software applications.



**MASC 415 The Television Studio: Advanced Television Production.**

Semester course; 3 laboratory hours. 1 credit. Prerequisite: MASC 101, MASC 203 and MASC 366. For mass communications majors only. Students learn the inner workings of the television studio. Studio camera operation, advanced audio, basic studio lighting, digital video effects, Chyron operation, graphics creation, TelePrompTer operation, master control, multicamera live direction techniques. Video and related electronic media computer software applications.

**MASC 425 Public Relations Research.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. An introduction to the role of research in public relations, with primary emphasis on content analysis, focus group, survey and communication audit methods and the evaluation of quantitative research data.

**MASC 439 Public Relations Campaigns.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101, 203, 323, 333, 335, and 425. For mass communications majors only. Application of public relations theory and methods in the preparation of a plan for a public relations campaign. Special attention to the planning process, including issues analysis, and application of public relations and research methods.

**MASC 450 Advertising Portfolio Development.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101, 203, 300, 380, 392 and 394. For mass communications majors only. An advanced, intensive study of copywriting and art direction for advertising. Students will prepare comprehensive advertisements and campaign materials for professional review. Emphasis will be on the development of a professional-quality portfolio.

**MASC 461 The Documentary.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 101, 203, 363, 365 and 366 or permission of instructor. MASC 461 to be taken concurrently with MASC 464. For mass communications majors only. An examination of documentary concepts through analysis of radio, television, and film documentaries. The course will center on the development, writing, and production of a documentary in the medium (radio, television, or film) of the student's choice.

**MASC 463 Electronic Media Writing II.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101, 203, 363, 365. For mass communications majors only. Radio practicum. Students will submit radio programming for broadcast on Richmond radio stations and on a statewide satellite news network. Writing intensive. Using the city of Richmond as their classroom, students will report, write and produce radio and audio news and programming. Studio and remote equipment will be utilized to create professional caliber projects.

**MASC 464 Electronic Media Writing III.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101, 203, 363, 365, 366. For mass communications majors only. Television practicum. Students will produce television programming for submission to broadcast on

Richmond television stations. Writing intensive. Using the city of Richmond as their classroom, students will report, write and produce television and video news and programming. Studio and remote equipment will be utilized to create professional caliber projects.

**MASC 465 Newscasting.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: MASC 363, 365, 366, 463, and 464, or permission of instructor. Students will cover stories and produce multiple news products: radio, television, and Internet stories. Students will rotate in the various newsroom responsibilities to experience field and studio production and on-air roles.

**MASC 475 Capital News Service.**

Semester course; 9 laboratory hours. 3 credits. Prerequisites: MASC 101, 203, 300 and 303. To register, a student must complete an application and submit writing samples for approval by the Capital News Service director. For mass communications majors only. Concentrated semester-long course providing government reporting and/or editing/graphics experience for advanced students for publication in statewide community newspapers. Coverage includes Virginia General Assembly when in session plus legislative committee meetings and governmental agencies in Richmond as well as the U.S. congressional and presidential elections. Some topical issue-oriented political and medical enterprise reporting included. Strong emphasis on fast-paced deadlines.

**MASC 480 Media Strategy.**

Semester course; 3 lecture hours. 3 credits. For mass communications majors only. Development of media strategies to accomplish advertising objectives. Practical problems in planning and buying media. Analysis of the rapidly-changing media environment, with special attention given to new electronic media and the Internet.

**MASC 481 Advertising Campaigns.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: MASC 101, 203, 392, 393, 394 or permission of instructor. For mass communications majors only. Intensive study in the planning and preparation of advertising campaigns. Students develop complete advertising programs including research, basic advertising plans, media and creative strategies, sales promotion, and merchandising plans.

**MASC 486 Creative Advertising Workshops.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MASC 101, 203, 394 or permission of instructor. For mass communications majors only. A concentrated study of principles of advertising message development. Creative strategies will be developed to accomplish advertising objectives. Students develop and defend campaign themes and message ideas including print layouts and television storyboards. Emphasis on creating messages for multimedia exposure.

**MASC 487 Seminar in Advertising in Society.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. An examination of the role of advertising in modern life

in America in light of historical and recent development in advertising and distribution.

**MASC 489 Sales Promotion.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MASC 203. For mass communications majors only. Describes and analyzes sales promotion between the manufacturer and three other levels: the distribution system, the consumer, and the sales force. Effective use of special media, merchandising activities, and sales aids also are discussed.

**MASC 491 Topics in Communications.**

Semester course; variable; 1, 2, or 3 credits per semester. Maximum total three credits. Prerequisite: MASC 101 and MASC 203. Permission of instructor. For mass communications majors only. An intensive study of a specialized field of mass communications.

**MASC 492 Independent Study.**

Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses. Prerequisites: MASC 101 and MASC 203. Open generally only to students of junior and senior standing who have acquired at least 12 credits of mass communications. To register, a student must write a proposal and have it approved by the student's adviser, supervising instructor and school director or assistant director. For mass communications majors only. The course is designed for students who wish to study subject matter not offered elsewhere in the mass communications' curriculum.

**MASC 493 Fieldwork/Internship.**

Semester course; variable; 1, 2, or 3 credits per semester. Maximum total three credits toward graduation. Prerequisites: MASC 101 and MASC 203. Permission of faculty member and of internship coordinator. For mass communications majors only. Selected students will receive on-the-job training under the supervision of an instructor and the employer. Internships are available in newspapers, magazines, public relations, advertising, radio and television.

**MASC 499 Problems and Issues in Mass Communications.**

Semester course; variable; 1, 2, or 3 credits per semester. Maximum total of three credits. Prerequisites: MASC 101 and MASC 203. Open only to students who have successfully completed at least twelve credits in mass communications. Determination of amount of credit and permission of instructor and school director must be obtained prior to registration for course. For mass communications majors only. A concentrated examination of specific areas of mass communications. Each mini-course will be five weeks in length. Topics announced in advance.

## Minor in African-American Studies Program

**M. Njeri Jackson\***

Director and Associate Professor of Political Science and Public Administration and African-American Studies (1990)  
B.A. 1976 Georgia State University  
M.A. 1982 and Ph.D. 1987 Atlanta University

Brooks, Christopher A.\* (1990) Associate Professor of Music and African-American Studies  
B.A. 1978 University of Maryland  
M.A. 1980 University of Michigan  
M.M. 1984 and Ph.D. 1989 University of Texas

Creighton-Zollar, Ann A.\* (1981) Associate Professor of Sociology

B.A., M.A. and Ph.D. 1980 University of Illinois, Chicago Circle

Jones, Norrece T.\* (1983) Associate Professor of History and African-American Studies

B.A. 1974 Hampton Institute

Ph.D. 1981 Northwestern University

Smedley, Audrey Y.\* (1995) Professor of Sociology and Anthropology and African-American Studies

B.A. 1954 and M.A. 1957 University of Michigan

Ph.D. 1967 Victoria University of Manchester

Toppin, Edgar A.\* (1994) Distinguished Visiting Professor of African-American History

A.B. 1949 and M.A. 1950 Howard University

Ph.D. 1955 Northwestern University

Wood, Mark D.\* (1997) Assistant Professor of Religious Studies and African-American Studies

B.A. 1982 and M.A. 1984 California State University, Chico

M.Phil. 1989 and Ph.D. 1994 Syracuse University, New York

\* Joint appointments

The minor in African-American studies requires a minimum of 18 credits. Students must complete AFAM 103 Introduction to African-American Studies, and at least one course dealing with Africa, African Americans, and Africa and African-American arts. Courses in African-American studies are designed to help students gain a knowledge and appreciation of the history and culture of Africans and African Americans and their contributions to world civilizations.

## Courses in African-American studies (AFAM)

### AFAM 103 Introduction to African-American Studies.

Semester course; 3 lecture hours. 3 credits. Using an interdisciplinary approach, this course will familiarize students with important events, developments, personalities, and other phenomena that help facilitate the study and understanding of African-Americans from their African past to their present existence.

### AFAM 104/SOCY 104 Sociology of Racism.

Semester course; 3 lecture hours. 3 credits. The course will explore the direct and indirect ways in which racial attitudes are acquired, their effect on individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation, and as a form of human conflict. The central focus of interest will be on black-white relationships.

### AFAM 105, 106/HIST 105, 106 Survey of African History.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of African civilization from prehistory to the present, emphasizing the events, ideas and institutions that have shaped, influenced and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present.

### AFAM 121, 122/DANC 121, 122 Tap Technique I.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness to move the body in the style required for tap dancing.

### AFAM 126, 127/DANC 126, 127 African-Caribbean Dance I.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean.

### AFAM 151, 152/DANC 151, 152 Jazz Dance Technique I.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness, and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance.

### AFAM 200/ANTH 200/INTL 200 Introduction to African Societies.

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems, and other cultural features that are traditional to its people.

### AFAM 204 Africa in Transition.

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 200 or permission of instructor. The impact of modern social change upon the traditional aspects of African life. Various aspects of social change as it applies to Africa today will be explored.

### AFAM 208 African-American Social Thought.

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 103. This course exposes students to the rich chronicle of the experiences and views of Africans in the United States that has been preserved in the writings of scholars, activists, and creative artists. The course introduces students to this body of thought selecting a number of social critics and creative writers whose texts address persistent themes that have shaped African-American life.

### AFAM 250/MHIS 250 Introduction to African-American Music.

Semester course; 3 lecture hours. 3 credits. An introductory survey of black involvement with the development of music in America from 1607 to the present. African-American musical styles will be studied from many aspects including their African roots and contemporary popular expression.

### AFAM 302/POLI 302 Politics of the Civil Rights Movement.

Semester course; 3 lecture hours. 3 credits. The main objectives of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America. It has special focus on the events of the 1960's and, particularly their implication for the current state of Civil Rights in the United States.

### AFAM 303/THEA 303 Black Theatre.

Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black-theatre dramaturgy.

### AFAM 305/SOCY 305/WMNS 305 Sociology of the Black Family.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. A sociohistory of the development of the dynamics of the black family.

### AFAM 307/RELS 307 Black Religion.

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects and cults.

### AFAM 308 Modes of Inquiry in African-American Studies.

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 208. This course introduces students to the interdisciplinary processes whereby those working in the field develop their arguments and interpretations concerning the black experience. Students will develop increased skills in library research and an awareness of the importance of such methodologies as archaeology, oral history, case studies, participant observations, experiments, and surveys. Student will be introduced to the need for critical analysis, the role of biases and frames of references, and the reason why scholars working in the field often reach different conclusions with reference to issues of fact, interpretation, and significance.

### AFAM 314/ENGL 314 African-American Literature.

Semester course; 3 lecture hours. 3 credits. An examination of the culture and literature of African-Americans from their roots in Africa and the African Diaspora to the present day. Authors may include Wheatley, Jacobs, Wilson, Brown, Dubois, Hurston, Wright, Gaines and Morrison.

### AFAM 315/ECON 315 Economic Development.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 210-211. An introduction to the process of economic development including a survey of development theory and a study of the experience of both underdeveloped and developed countries. Economic policies and tools of economic planning for stimulating development will be presented.

### AFAM 318/POLI 318/WMNS 318 Politics of Race, Class and Gender.

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of

political values, conflicts, processes, structures and public policy in the United States.

**AFAM 322/PSYC 322 Personality and Behavior of the African-American.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study of personality factors, such as motivation, ego functioning, and the socialization processes with special emphasis on living conditions of African-Americans.

**AFAM 333/GEOG 333 Geography of Africa.**

Semester course; 3 lecture hours. 3 credits. A study of land forms, climate, peoples, boundaries, trade, and cultural groupings of the African continent.

**AFAM 342/ANTH 342 African-American Art.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Advanced standing. A study of the art forms produced by Americans of African origin from the seventeenth century to the present with an emphasis on contemporary trends in black art.

**AFAM 343/POLI 343 Black Political Thought.**

Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present.

**AFAM 350/MHIS 350 Studies in the Music of the African Continent and Diaspora.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions.

**AFAM 356/POLI 356/INTL 356 African Government and Politics.**

Semester course; 3 lecture hours. 3 credits. Introduces students to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism, and modernization strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa.

**AFAM 357/POLI 357/INTL 357 Politics of Southern Africa.**

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region, such as Zimbabwe, Angola, and Mozambique, will be studied.

**AFAM 358/ANTH 358 African Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American art.

**AFAM 361, 362/HIST 361, 362 Americans from Africa.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of

black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations, and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877.

**AFAM 363/ENGL 363 African Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101-102 or 200. A survey of the literatures of Africa with particular emphasis on fiction and on West Africa. Some attention also will be given to orature.

**AFAM 365/ENGL 365 Caribbean Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101-200. A survey of West Indian writings. Attention will be given to African, European, and Amerindian influences, as well as to the emergence of a West Indian literary tradition.

**AFAM 387/HIST 387 History of West Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to the present, with emphasis on the rise of states and empires, the introduction, spread, and impact of Islam, the Atlantic slave trade and its effects, colonialism, African resistance and nationalism, and developments since independence.

**AFAM 388/HIST 388 Africa: Social, Cultural, and Economic History.**

Semester course; 3 lecture hours. 3 credits. A study of economic, social, and cultural developments in Africa from the beginning of the nineteenth century to the present. Emphasis is placed on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs.

**AFAM 389/HIST 389 History of Southern Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia, and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa.

**AFAM 390/HIST 390/WMNS 390 Africa and the Americas: Slavery, Gender, and Race.**

Semester course; 3 lecture hours. 3 credits. An examination of various aspects of slavery in Africa primarily, and selected parts of the African Diaspora including the United States, Canada and the Caribbean, with emphasis on African conditions of servility, the Atlantic slave trade, and chattel slavery. The role gender and race played in slavery will be given particular attention.

**AFAM 392/HIST 392 The Caribbean to 1838.**

Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late fifteenth century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition.

**AFAM 393/HIST 393 Akhenaten to Cleopatra.**

Semester course; 3 lecture hours. 3 credits. A survey of Egyptian history from the period of the Empire (New Kingdom, c. 1570 B.C.) through the Ptolemaic Age of Cleopatra (c. 30 B.C.). Particular areas of concentration will include the Amarna Period of Akhenaten, and various aspects of Egyptian daily life.

**AFAM 401/SOCY 401 African-Americans and the United States Health Care System.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 103, AFAM 305 or permission of the instructor. Explores issues surrounding the disparity in health status and health outcomes between African-Americans and other groups in the United State. Students are required to participate in an experiential exercise designed to enhance learning.

**AFAM 408 Seminar in African-American Studies.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 308, AFAM 416. Generally open only to students of senior standing who have completed 24 credits of African-American studies. Involves the planning and execution of a major research project demonstrating the interdisciplinary processes through which those working in the field of African-American Studies use diverse sources to develop their arguments and interpretations.

**AFAM 413/ARTH 350 African and Oceanic Art.**

Semester course; 3 lecture hours. 3 credits. A study of the architecture, painting, sculpture, and civilizations of the major art-producing tribes of West Africa and Oceania from the 13th century to the present.

**AFAM 416/ANTH 416 The Origin and Evolution of the Idea of Race.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or AFAM 103 or permission of instructor. Explores the origins and social history of the "idea" of race from the Middle Ages to the end of the twentieth century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon.

**AFAM 420/ANTH 420/INTL 420 Women of Africa.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or AFAM 103 or permission of instructor. Looks at the traditional roles of women in African Societies and examines how women have coped in different environments. Focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and contrasts these with women's roles in large state societies of Africa and in the modern urbanized context.

**AFAM 440/ANTH 440 Contemporary Art and Architecture of Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the impact on African art and architecture of colonialism, urbanization, and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists.

**AFAM 491 Topics in African-American Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits; three credits may be applied to the African-American studies minor. An in-depth study of specialized areas of African-American Studies.

**AFAM 492 Independent Study.**

Semester course; variable credit. Maximum four credits per semester. Maximum total of four credits in all independent study courses. Generally open only to students of junior and senior standing who have acquired at least 12 credits in African-American studies courses. Determination of the amount of credit and permission of the instructor and coordinator must be procured prior to registration for the course.

## Minor in American Studies Program

**Richard A. Fine**

Professor and Coordinator, American Studies (1979)  
A.B. 1973 Brown University  
M.A. 1975 and Ph.D. 1979 University of Pennsylvania

Offered jointly by the departments of English and History, the minor in American studies consists of at least 18 upper-level credits to be distributed as follows: six credits in American studies (AMST) courses; three credits in humanities electives; three credits in social science electives; and six credits in either humanities, social science or other approved electives, or in independent study. All courses selected to fulfill distribution areas must deal with American materials and topics. A list of recommended courses and electives is available from the coordinator.

## Courses in American studies (AMST)

**AMST 195 Richmond.**

15 contact hours. 1 credit. A series of mini-courses dealing with aspects of Richmond's literary and historical importance from the city's beginning to the present.

**AMST 391 Topics in American Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Selected issues or problems in American civilization with materials drawn from such areas as history, the social sciences, philosophy, literature, the arts, and mass communications.

**AMST 394 Perspectives in American Studies.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Six credits in American-related courses. An introduction to the methods, significant works, and major trends in American studies. May be taken for American literature credit by English majors. May not be used to satisfy the College of Humanities and Sciences requirements in literature.

## Department of Biology

**Leonard A. Smock**

Professor and Chair (1979)  
B.S. 1969 and M.S. 1970 University of Illinois  
Ph.D. 1979 University of North Carolina

**James E. Gates**

Associate Professor and Associate Chair (1975)  
B.S. and M.S. Northern Illinois University  
Ph.D. 1972 University of Missouri

**Donald R. Young**

Professor and Director of Graduate Studies (1984)  
B.S. 1975 Clarion State University  
M.S. 1979 and Ph.D. 1982 University of Wyoming

Anderson, John E.\* (1999) Research Assistant Professor of Biology and Center for Environmental Studies  
B.A. 1984 Mary Washington College  
M.S. 1992 and Ph.D. 1996 George Mason University

Bateman, Irma B. (1999) Teaching Assistant Professor  
B.S. 1962 Lynchburg College  
M.S. 1966 Medical College of Virginia of Virginia Commonwealth University

Blem, Charles R. (1969) Professor  
B.S. 1965 Ohio University  
M.S. 1968 and Ph.D. 1969 University of Illinois

Blem, Leann B. (1982) Teaching Assistant Professor  
B.S. Ohio University  
M.S. 1968 University of Illinois

Brown, Bonnie L. (1992) Associate Professor  
B.S. 1981 University of Alabama, Birmingham  
Ph.D. 1989 Old Dominion University

Byrd, Jason H.\* (2000) Assistant Professor of Biology and Criminal Justice  
B.S. 1993, M.S. 1995 and Ph.D. 1998 University of Florida

Chinnici, Joseph P.\* (1970) Associate Professor of Biology and Human Genetics  
A.B. 1965 La Salle College  
Ph.D. 1970 University of Virginia

Conway, Carolyn M. (1976) Assistant Professor  
B.S. Longwood College  
M.A. College of William and Mary  
Ph.D. 1972 University of Miami

Eggleston, William B. (1993) Associate Professor  
B.S. 1982 Duke University  
Ph.D. 1990 University of Wisconsin, Madison

Fine, Michael L. (1979) Professor  
B.S. University of Maryland  
M.A. College of William and Mary  
Ph.D. 1976 University of Rhode Island

Fisher Jr., Robert W. (1975) Associate Professor  
B.S. California State University  
M.A. University of California, Santa Cruz  
Ph.D. 1974 Syracuse University

Garman, Gregory C. (1985) Associate Professor and Director, Center for Environmental Studies  
B.A. 1978 Millersville University  
M.S. 1980 Virginia Polytechnic Institute and State University  
Ph.D. 1984 University of Maine

Kester, Karen M. (1997) Assistant Professor  
B.S. 1980 and M.S. 1983 Louisiana State University  
Ph.D. 1991 University of Maryland

McCowen, Sara M. (1975) Associate Professor  
B.A. Duke University  
M.A.T. University of North Carolina, Chapel Hill  
Ph.D. 1975 Medical College of Virginia, Virginia Commonwealth University

Pagels, John F. (1969) Professor  
B.S. Central Michigan University  
M.S. and Ph.D. 1970 Tulane University

Perozzi, Rhoda E. (1993) Teaching Assistant Professor  
B.A. 1969 Harding University  
M.S. 1973 and Ph.D. 1976 University of Illinois

Peters, Gerald A. (1987) Professor  
B.S. 1966 Eastern Michigan University  
M.S. 1969 and Ph.D. 1970 University of Michigan

Plunkett, Gregory M. (1996) Assistant Professor  
B.S. 1987 and M.A. 1990 College of William and Mary  
Ph.D. 1994 Washington State University

Ryan, John J. (1997) Assistant Professor  
B.A. 1988 University of Richmond  
Ph.D. 1992 Medical College of Virginia, Virginia Commonwealth University

Seidenberg, Arthur J.\* (1968) Associate Professor and Assistant Dean for Undergraduate Academic Affairs and Coordinator of Pre-Health Sciences Advising  
B.S. 1961 Brooklyn College  
Ph.D. 1969 University of Illinois

Stewart, Jennifer K. (1981) Associate Professor  
B.S., M.S. and Ph.D. 1975 Emory University

Tombes, Robert M.\* Assistant Professor of Biology and Massey Cancer Center  
B.A. 1981 University of Virginia  
Ph.D. 1986 University of Washington, Seattle

Turner, Gail C. (1984) Teaching Assistant Professor  
B.S. 1971 and M.S. 1973 East Tennessee State University

Webb, Stanley R.\* (1976) Associate Professor of Biology and Pathology  
B.S. 1967 Ouachita University  
M.S. 1970 University of Arkansas  
Ph.D. 1974 Purdue University

Wu, Fang-Sheng (1988) Associate Professor  
B.S. 1968 and M.S. 1973 National Taiwan Normal University  
Ph.D. 1977 Michigan State University

**Emeriti faculty**

Johnson, Miles F., Professor Emeritus  
B.S. Wisconsin State University at River Falls  
M.S. University of Wisconsin  
Ph.D. University of Minnesota

May, Margaret L., Associate Professor Emerita  
B.S. American University  
M.S. George Washington University

Richards Jr., Walter L., Associate Professor Emeritus  
B.S. Virginia Military Institute  
M.A. University of Virginia

\* Affiliate appointment

The curriculum in biology prepares students for graduate study in biology,

for employment in laboratory or field programs in private industry or government agencies, and for teaching in secondary schools. This curriculum also prepares students for admission into schools of medicine, dentistry and veterinary medicine, and into allied health programs.

The Department of Biology offers the bachelor of science in biology.

**Biology majors interested in teaching careers** in elementary, secondary or special education can enroll in the Extended Teacher Preparation Program which simultaneously awards a bachelor's degree in biology and a master's degree in teaching. For more information about this program jointly administered by the College of Humanities and Sciences and the School of Education, contact the School of Education's Office of Academic Services.

**Pre-professional study for the health sciences.** The bachelor of science in biology is a four-year course of study preparing students for medical, dental or veterinary school.

**Master of science in biology.** For information about this program, see the Graduate Bulletin.

**Nonmajor electives.** The department offers a range of courses that do not fulfill requirements of the major or minor and are not specific requirements for pre-health science students. These courses are designed to develop the general science literacy of non-biology majors.

## Degree requirements

**Bachelor of science in biology.** The bachelor's curriculum in biology requires a minimum of 120 credits, with at least 40 of those credits in biology. Up to four credits of biochemistry may be applied toward the major.

Majors must take STAT 210 Basic Practice of Statistics, and one additional course from the following options:

1. A statistics (STAT) course numbered above 210.
2. A mathematics (MATH) course numbered 200 or above.

Before enrollment into any of these mathematical sciences options, all students must take the Mathematical Placement Test. Depending on the test results, students may be placed in MATH 151 Precalculus Mathematics

before being admitted into one of the courses listed above.

Below is a list of required courses and the indicated recommended sequence.

**Freshman year.** BIOL 151, 152 Introduction to Biological Science and 151L, 152L Laboratory I and II, CHEM 101-102 General Chemistry and CHEM 101L, 102L General Chemistry Laboratory I and II, and mathematical sciences courses selected from the options described previously.

**Sophomore year.** BIOL 218 Cell Biology, BIOL 317 Ecology, one additional biology course preferably with lab, CHEM 301-302 Organic Chemistry and CHEM 301L-302L Organic Chemistry Laboratory I and II, and mathematical sciences courses if not already completed.

**Junior year.** Two courses from the BIOCORE and one additional biology course, PHYS 207, 208 University Physics or PHYS 201-202 General Physics.

**Senior year.** Remaining biology major courses.

**BIOCORE.** The following courses must be taken by majors:  
BIOL 151, 152 and 151L, 152L Introduction to Biological Science and Laboratory I and II  
BIOL 218 Cell Biology  
BIOL 310 Genetics  
BIOL 317 Ecology

**Organismal biology.** One course from each of the following groups:

### Animal group

BIOL 301 Comparative Vertebrate Anatomy  
BIOL 302 Animal Embryology  
BIOL 312 Invertebrate Zoology  
BIOL 313 Vertebrate Natural History

### Plant group

BIOL 320 Biology of the Seed Plant  
BIOL 321 Plant Development  
BIOL 410 Systematic Botany

**At least six laboratory courses must be taken from all biology courses; one of these may be BIOL 492 Independent Study or BIOL 495 Research and Thesis. Registration in BIOL 492 or 495 must be for a minimum of two-credit hours in order to count as one of the six required laboratory courses.**

## Transfer or change-of-major students

Students who change their major to biology after having completed BIOL 109, 109L, 110, 110L or transfer to VCU with a general biology course

equivalent to these courses are allowed to count these courses toward the biology major in lieu of BIOL 151, 152, 151L, 152L. BIOL 101, 102, and 103 and laboratories may not be used toward the biology major, but may be used as general electives toward the bachelor's degree.

No more than eight credits of the 100-level (or introductory level) courses can be applied to the major.

## Minor in biology

The minor in biology consists of a minimum of 19 credits in biology, including the following: BIOL 151, 152 and 151L, 152L Introduction to Biological Science and Laboratory I, II; BIOL 218 Cell Biology; BIOL 310 Genetics; and BIOL 317 Ecology. Three biology laboratory experiences are required including BIOL 151L and 152L, but not including BIOL 492 Independent Study or BIOL 495 Research and Thesis. Substitutions for BIOL 151-152 and laboratories may be made on a case-by-case basis. A grade of "C" or better must be earned in each class.

Students also are required to complete CHEM 101-102, 101L, 102L General Chemistry and General Chemistry Laboratory I and II.

## Honors in biology

Biology majors may graduate with honors in biology. To qualify, students must have overall and biology GPAs of at least 3.50 and must complete the following courses in this sequence: BIOL 392 Introduction to Research, at least four credits of BIOL 495 Research and Thesis, and BIOL 490 Research Seminar. Grades of "A" or "B" must be earned in each of the listed courses. Students who qualify will have the notation "Honors in Biology" placed on their transcript. Students must meet all Department of Biology requirements for graduation. Students should consult with their academic advisers to create a program suitable to their particular needs and interests.

## Cooperative Education Program

Qualifying students pursuing undergraduate degrees in biology are eligible for the Cooperative Education Program. A full description of this program appears in Part XX of this bulletin.

## Courses in biology (BIOL)

The following courses do not apply toward the major in biology: BIOL 101, 101L, 102, 102L, 103, 103L, 205, 205L, 206, 206L, 209, 209L, 217, 315, 332.

### BIOL 101 Life Science.

Semester course; 3 lecture hours. 3 credits. A topical approach to basic biological principles. Topics include molecular aspects of cells, bioenergetics, photosynthesis, cellular respiration, cellular and organismal reproduction, genetics and evolution, and ecology. Not applicable for credit toward the B.S. in biology. Both BIOL 101 and BIOL 109 or 110 may not be offered for degree credit.

### BIOL 101L Life Science Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: BIOL 101. Laboratory exercise correlated with BIOL 101. Not applicable for credit toward the B.S. in biology.

### BIOL 102 Science of Heredity.

Semester course; 3 lecture and 1 recitation hour. 4 credits. Basic scientific principles of genetics and its impact on individuals and society. Draws together principles of biology, chemistry, mathematics, ethics, and sociology. Topics include principles of inheritance, DNA structure and function, biotechnology and its impact on society, the nature of various genetic disorders, genetic screening and counseling, population genetics, and the bioethics of genetic manipulation. Not applicable for credit toward the B.S. in biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

### BIOL 102L Science of Heredity Laboratory.

Semester course; 2 hours. 1 credit. Pre or corequisite: BIOL 102 (113). Laboratory exercises correlated with BIOL 102. Not applicable for credit toward the B.S. in biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

### BIOL 103/ENVS 103 Environmental Science.

Semester course; 3 lecture and 1 recitation hour. 4 credits. Basic scientific principles of environmental processes. Draws together aspects of biology, chemistry, geology, physics, and sociology. Among the topics covered are ecology, natural resources, air and water resources, energy and recycling, population biology and sustainable global societies. Not applicable for credit toward the B.S. in biology. Not applicable as a prerequisite for any biology course at the 200 level or above.

### BIOL 103L/ENVS 103L Environmental Science Laboratory.

Semester course; 2 hours. 1 credit. Pre or corequisite: BIOL 103. Laboratory exercises correlated with BIOL 103. Not applicable for credit toward the B.S. in biology. Not applicable as a prerequisite for any biology degree. Not applicable as a prerequisite for any biology course at the 200 level or above.

### BIOL 151 Introduction to Biological Science I.

Semester course; 3 lecture hours. 3 credits. Principles of

plant biology including cell biology, physiology, and evolution of plant diversity on Earth. Designed for biology majors. BIOL 151 may be taken after BIOL 152.

### BIOL 151L Introduction to Biological Science Laboratory I.

Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIOL 151. Laboratory investigation of plant genetics, physiology, and evolution, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIOL 151.

### BIOL 152 Introduction to Biological Science II.

Semester course; 3 lecture hours. 3 credits. Principles of animal biology including genetics, physiology, and evolution of animal diversity on Earth. Designed for biology majors. BIOL 152 may be taken before BIOL 151.

### BIOL 152L Introduction to Biological Science Laboratory II.

Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: BIOL 152. Laboratory investigation of plant genetics, physiology, and evolution, with an emphasis on formation and testing of hypotheses. Laboratory exercises will elaborate themes discussed in BIOL 152.

### BIOL 200 Biological Terminology.

Semester course; 1 lecture hour. 1 credit. Prerequisite: A course in biology. The study of Greek and Latin word roots in the vocabulary of biology and medicine.

**A "C" grade or better in each prerequisite course (BIOL 101, 101L, 102, 102L, 151, 151L, 152, 152L) is required for enrollment in BIOL 205, 206, 209 and 217.**

### BIOL 205 Basic Human Anatomy.

Semester course; 2 lecture hours. 2 credits. Prerequisite: A "C" grade or better in BIOL 101 and 101L or equivalent. Corequisite: BIOL 205L. Human body structure with emphasis on the skeleto-muscular aspects, utilizing human specimens and models as demonstrations. Not applicable for credit toward the B.S. in biology.

### BIOL 205L Basic Human Anatomy Laboratory.

Semester course; 4 laboratory hours. 2 credits. Pre or corequisite: BIOL 205. Laboratory stressing human body structure with emphasis on the skeleto-muscular aspects, utilizing the cat for dissection and human specimens and models as demonstrations. Not applicable for credit toward the B.S. in biology.

### BIOL 206/PHIS 206 Human Physiology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: A "C" grade or better in BIOL 101 and 101L or equivalent. Functioning of the human body with emphasis on experimental procedures. Not applicable for credit toward the B.S. in biology.

### BIOL 206L/PHIS 206L Human Physiology Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: BIOL/PHIS 206. Functioning of the human body with emphasis on experimental procedures. Not applicable for credit toward the B.S. in biology.

### BIOL 209 Medical Microbiology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: A "C" grade or better in BIOL 101 and 101L or equivalent. General principles of microbiology and immunology to provide a thorough understanding of the host-microbe relationship in disease. Not applicable for credit toward the B.S. in biology.

### BIOL 209L Medical Microbiology Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: BIOL 209. Techniques to culture, isolate, and identify microbes with related topics such as water coliform tests, and antibiotics and disinfectant sensitivity testing. Not applicable for credit toward the B.S. in biology.

### BIOL 217 Principles of Nutrition.

Semester course; 3 lecture hours. 3 credits. Prerequisite: A "C" grade or better in BIOL 101 and 101L or equivalent. An introduction to basic principles of nutrition and their application in promoting growth and maintaining health throughout the life cycle. Not applicable for credit toward the B.S. in biology.

**A "C" grade or better in each prerequisite course (BIOL 151, 151L, 152, 152L, or equivalent) is required for enrollment in all advanced biology courses (BIOL 218 or higher).**

### BIOL 218 Cell Biology.

Semester course; 3 lecture hours. 3 credits. Prerequisites: A "C" grade or better in BIOL 151, 151L, 152, 152L, or equivalent; eight credits in chemistry. An introductory study of the molecular biology of the cell including protein chemistry, genetic mechanisms and cellular metabolism.

**A "C" grade or better in BIOL 218 is required for enrollment in all courses for which it is a prerequisite.**

### BIOL 291 Topics in Biology.

Semester course; variable credit. A study of a selected topic in biology. See the Schedule of Classes for specific topic(s) and prerequisites.

### BIOL 292 Independent Study.

Semester course; variable credit. Maximum of two credits per semester; maximum total credit for all independent study courses (BIOL 292 and/or 492) six credits. Prerequisites: Eight credits in biology and an overall GPA of 3.0. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Designed to allow students to accomplish independent readings of biological literature under the supervision of a staff member.

### BIOL 300 Experimental Methods.

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent, and a year of general chemistry. Basic methods used in biological research including experimental design, instrumentation, data collection, analysis and presentation.

### BIOL 301 Comparative Vertebrate Anatomy.

Semester course; 3 lecture and 6 laboratory hours. 5 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. The

evolution of vertebrate forms as demonstrated by anatomical studies of selected vertebrate types.

### **BIOL 302 Animal Embryology.**

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisite: A "C" grade or better in BIOL 218. Basic reproductive and developmental processes during animal embryonic development. Includes programming/packaging in the egg, cell-cell interactions, and basic organogenesis. Cellular mechanisms and the role of differential gene activity in developmental processes and experimental work using living invertebrate and vertebrate embryos.

### **BIOL 303 Bacteriology.**

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Prerequisites: A "C" grade or better in each prerequisite course BIOL 218; eight credits in chemistry. The morphology and physiology of bacteria as applied to their cultivation, identification, and significance to other organisms.

### **BIOL 307 Aquatic Ecology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent, BIOL 317, CHEM 102 and 102L. The physical, chemical, and especially the biological aspects of freshwater ecosystems.

### **BIOL 307L Aquatic Ecology Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 307. Laboratory and field studies of the biota of aquatic habitats and their relationship with the environment.

### **BIOL 308 Vertebrate Histology.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: Prerequisite: A "C" grade or better in BIOL 218. Microanatomy of vertebrate cells, tissues, and organs and the relationship of structure to function. Laboratory work involves an in-depth study of vertebrate microanatomy at the light microscope level as well as an introduction to techniques used for the preparation of materials for histological study.

### **BIOL 309 Entomology.**

Semester course; 2 lecture and 6 laboratory hours. 4 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Field and laboratory work emphasized to illustrate insect diversification, diagnostic features, habitats, and development patterns. A project is required and some independent work will be necessary.

### **BIOL 310 Genetics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: A "C" grade or better in BIOL 218. The basic principles of molecular and applied genetics of plants, animals, and microorganisms.

### **BIOL 310L Laboratory in Genetics.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Prerequisite or corequisite: BIOL 310. Exercises and experiments are designed to demonstrate the laws of heredity using a variety of prokaryotic and eukaryotic organisms. Topics may include probability and statistics, cell division, particulate inheritance including X-linked examples, genetic

mapping, chromatography, isolation and analysis of DNA, population genetics.

### **BIOL 311 Animal Physiology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: A "C" grade or better in BIOL 218. Physiological principles of animal cells, tissues, and organs from the viewpoint of chemical and physical phenomena.

### **BIOL 311L Animal Physiology Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 311. Experimental methods in physiology.

### **BIOL 312 Invertebrate Zoology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. A survey of the invertebrate animals with emphasis on environmental interactions. A weekend trip to a marine environment is required.

### **BIOL 312L Invertebrate Zoology Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 312. A laboratory survey of the invertebrate animals, with emphasis on environment interactions. A weekend trip to a marine environment is required.

### **BIOL 313 Vertebrate Natural History.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. The natural history of vertebrates with emphasis on the species native to Virginia.

### **BIOL 313L Vertebrate Natural History Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 313. Laboratory exercises focusing on the natural history of vertebrates, with emphasis on the species native to Virginia.

### **BIOL 315/ENVS 314 Man and Environment.**

3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. A comparative study of the ecology and natural history of human populations, including the environments as determining factors in the evolution of human institutions and technology, resources management, and population crises; cultural traditions as mechanisms of population control; basic theory of population biology. Not applicable for credit toward the B.S. in biology.

### **BIOL 317 Ecology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. An introduction to the basic principles of ecology, including interactions among organisms and influences of the physical environment.

### **BIOL 317L Ecology Laboratory.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 317. A field-oriented course that provides experience in ecological research, including experimental design, instrumentation, data collection, and data analysis.

### **BIOL 320 Biology of the Seed Plant.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. The physiology, structure, and adaptation of seed plants.

### **BIOL 321 Plant Development.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: A "C" grade or better in BIOL 218. A survey of the developmental changes that take place during the life cycle of lower and higher plants. Emphasis is placed on the control factors that are involved in regulating the ordered changes which take place during development.

### **BIOL 321L Plant Development Laboratory.**

Semester course; 4 laboratory hours. 2 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 321. An experimental approach applied to a phylogenetic survey of developmental model systems. Observational and experimental protocols will be used to collect data and gather information. Problem solving skills will be utilized to analyze and present experimental results.

### **BIOL 332/ENVS 330 Environmental Pollution.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent and eight credits in biology. The pollution in the environment with emphasis on the procedures for detection and abatement. Not applicable for credit toward the B.S. in biology.

### **BIOL 391 Topics in Biology.**

Semester course; variable credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. A study of a selected topic in biology. See the Schedule of Classes for specific topic(s) and prerequisites.

### **BIOL 392 Introduction to Research.**

Semester course; 2 lecture/demonstration hours. 1 credit. Prerequisites: ENGL 200, STAT 208 or 210, BIOL 151-152, 151L-152L Introduction to Biological Science I and II and Laboratories, BIOL 218 Cell Biology; BIOL 310 Genetics; BIOL 317 Ecology and one of the following laboratory experiences: BIOL 300 Experimental Methods, BIOL 310L Genetics Laboratory, or BIOL 317L Ecology Laboratory as well as junior/senior status. An introduction to the scientific process, including the mechanics of problem definition, information gathering, and experimental design. Experimentation is discussed in context with methods of data collection and analysis; some basic research techniques are demonstrated. Aims are to prepare the student for future research experiences, and to have the student write detailed research proposals.

### **BIOL 401 Applied and Environmental Microbiology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: A "C" grade or better in BIOL 218. The biology and chemical activities of microorganisms (bacteria, algae, virus, and fungi) of industrial, pharmaceutical, and agricultural importance.

### **BIOL 405 Bacterial Physiology.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: A "C" grade or better in BIOL 218; CHEM 301-302. The physiology and metabolism of prokaryotic cells

including cell structure and function, growth, basic genetics and regulation of cell functions.

#### **BIOL 410 Systematic Botany.**

Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent or permission of instructor. Taxonomy, diversity, and evolutionary history of vascular plants (including ferns, gymnosperms, and flowering plants). Lecture emphasis on evolutionary relationships; laboratory emphasis on plant recognition and identification, especially of the Virginia flora, including some field trips to areas of local botanical interest.

#### **BIOL 411 Summer Flora.**

Semester course; 1 lecture and 5 laboratory hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent or permission of instructor. Field course in taxonomy of local summer flora.

#### **BIOL 415 Aquatic Macrophytes.**

Semester course; 1 lecture and 5 laboratory hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent and BIOL 410 or 411. Field and laboratory study of vascular plants or aquatic habitats; including collection and identification, and consideration of the ecology, morphology, and economic value of aquatic macrophytes.

#### **BIOL 416 Ornithology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent and eight credits of biology or permission of instructor. Basic biology of birds, with emphasis on their role in the environment.

#### **BIOL 416L Ornithology Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 416. Techniques of identifying, counting, and analyzing behavior of birds in the field.

#### **BIOL 417 Mammalogy.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent, 12 credits of biology and permission of instructor. Study of the characteristics, adaptive radiation, and distribution of mammals, with emphasis on North American forms.

#### **BIOL 420 Plant Physiology.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: A "C" grade or better in BIOL 218; either BIOL 320 or 321. Topics: photosynthesis, mineral nutrition, transport, phytohormones, development, tissue culture, and environmental stress. The laboratory will stress student-oriented research projects.

#### **BIOL 431 Introduction to Marine Biology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent, BIOL 317 and CHEM 102, 102L. An introduction to physical, chemical, and geological oceanography and a more detailed treatment of the organisms and ecological processes involved in the pelagic and benthic environments of the world's oceans and estuaries.

#### **BIOL 435 Herpetology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent and BIOL 317 or equivalent. The evolution, ecology, structure, taxonomy, and behavior of reptiles and amphibians.

#### **BIOL 436L Laboratory in Herpetology.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 435. Identification, behavior, structure, and ecology of amphibians and reptiles. Two Saturday field trips are required.

#### **BIOL 445 Neurobiology and Behavior.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent and BIOL 317 or equivalent. The study of animal behavior stressing ecological, evolutionary, and neurobiological approaches.

#### **BIOL 455 Immunology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent and BIOL 310. A comprehensive introduction to the immune system of higher animals, emphasizing the molecular and cellular basis for antibody-mediated immunity.

#### **BIOL 490 Research Seminar.**

Semester course; 1 credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Pre or corequisite: BIOL 492 or 495 and senior status. Opportunity for students to develop skills necessary for effective oral presentation of their research work. Activities include a variety of seminar discussions and activities such as preparation of visual materials and statistical analysis of data. Students will make several oral presentations directly related to their specific BIOL 492 or 495 projects.

#### **BIOL 491 Topics in Biology.**

Semester course; variable credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. A study of a selected topic in biology. See Schedule of Classes for specific topic(s) and prerequisites.

#### **BIOL 491L Topics in Biology Laboratory.**

Semester course; variable credit. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Laboratory investigations in a selected topic of biology. See Schedule of Classes for specific topic(s) and prerequisites.

#### **BIOL 492 Independent Study.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all independent study courses (BIOL 292, 492 and/or 495). Prerequisites: One of the following - BIOL 300 Experimental Methods, BIOL 310L Laboratory in Genetics, or BIOL 317L Ecology Laboratory, or permission of Department of Biology chairperson. A proposal acceptable to the supervising faculty member and department chairperson is required. Projects should include data collection and analysis, learning field and/or laboratory techniques, and/or mastering experimental procedures, all under the direct supervision of a faculty member. A minimum of three hours of supervised activity per week per credit hour is required. A final report must be submitted at the completion of the project. A

minimum of two credits is required for the course to count as a laboratory experience. Graded as pass/fail.

#### **BIOL 495 Research and Thesis.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all undergraduate research in biology (BIOL 292, 492, 495). Prerequisites: BIOL 392, permission of the supervising faculty member and a research proposal acceptable to the departmental chair. Activities include field and/or laboratory research under the direct supervision of a faculty mentor. A minimum of three hours of supervised activity per week per credit hour is required. Research projects must include experimental design and analysis of data. A written thesis of substantial quality is required upon completion of the research. A minimum of two credits is required for the course to count as a laboratory experience. A minimum of four credits is required for Honors in Biology.

#### **BIOL 496 Biology Preceptorship.**

Semester course; maximum 4 credits. Prerequisites: BIOL 151, 151L, 152, 152L, or equivalent. Open to juniors and seniors who have completed 14 credits of biology (including the relevant core course) and have an overall GPA of 3.0 or better. Permission of instructor and department chair required prior to registration. Preceptors will conduct review sessions for students enrolled in ONE of the following biology core courses: BIOL 218, BIOL 317, or BIOL 310. Preceptorship cannot be repeated for the same course for biology credit. Preceptors will attend all class lectures, prepare course study/review material and lead three hours of review sessions each week under the guidance of the faculty adviser. A preproposal and final report are required. Graded as pass/fail.

**Courses at the 500 level listed in this bulletin are open to qualified seniors and graduate students only.**

#### **BIOL 502/MICR 502 Microbial Biotechnology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisites: MICR 504 or equivalent, BIOC 503-504 or equivalent. Open to qualified seniors and graduate students only. Discussion of the application of basic principles to the solution of commercial problems. The course will cover the historical principles in biotransformations as related to primary and secondary metabolism, as well as recombinant DNA technology and monoclonal antibodies and products resulting from the application of recombinant DNA technology.

#### **BIOL 503 Fish Biology.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIOL 317 or equivalent. Open to qualified seniors and graduate students only. Classification, behavior, physiology, and ecology of fishes. Laboratories will emphasize field collection of fish and identification of specimens.

#### **BIOL 504 Comparative Animal Physiology.**

Semester course; 3 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIOL 218 and CHEM 301, 301L, 302, and 302L. Open to qualified seniors and graduate students only. Comparative physiology of animals with a molecular emphasis.



**BIOL 507 Aquatic Microbiology.**

Semester course; 2 lecture and 4 laboratory hours. 4 credits. Prerequisites: BIOL 303 and 307 or equivalents. Open to qualified seniors and graduate students only. This course will involve a practical approach to the methods used to culture, identify, and enumerate specific microorganisms that affect the cycling of elements in aquatic systems and those that affect or indicate water quality.

**BIOL 510 Conservation Biology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 310 and 317 (or equivalents) or permission of instructor. Open to qualified seniors and graduate students only. Explores the accelerated loss of species due to increasing human population pressure and the biological, social, and legal processes involved in conserving biodiversity.

**BIOL 514 Stream Ecology.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: BIOL 317. Open to qualified seniors and graduate students only. A study of the ecology of streams and rivers. Laboratory emphasis is on the structure and functioning of aquatic communities in mountain to coastal streams.

**BIOL 518 Plant Ecology.**

Semester course; 3 lecture and 2 laboratory hours. One three-day field trip is required. 4 credits. Prerequisite: BIOL 317. Open to qualified seniors and graduate students only. A lecture, field, and laboratory course concerned with the development, succession, and dynamics of plant communities and their interrelations with climate, soil, biotic, and historic factors.

**BIOL 520 Population Ecology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 310 and 317 or permission of instructor. Open to qualified seniors and graduate students only. Theoretical and empirical analysis of processes that occur within natural populations, including population genetics, population growth and fluctuation, demography, evolution of life history strategies, and interspecific interactions. Quantitative models will be used extensively to explore ecological concepts.

**BIOL 521 Community Ecology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 317 or equivalent. Open to qualified seniors and graduate students only. Theoretical and empirical analysis of the structure and function of natural communities, ecosystems, and landscapes.

**BIOL 522 Evolution and Speciation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 310 or equivalent. Open to qualified seniors and graduate students only. Evolutionary principles, with emphasis on genetic and environmental factors leading to changes in large and small populations of plants and animals, and the mechanisms responsible for speciation.

**BIOL 524 Endocrinology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 218 and CHEM 301, 301L, 302, and 302L or equivalent. Open to qualified seniors and graduate students only.

Hormonal control systems at the organ, tissue, and cellular level. Although the major emphasis will be on vertebrate endocrine systems, some discussion of invertebrate and plant control systems will be covered.

**BIOL 530/HGEN 501 Human Genetics.**

Semester course; 3 credits. Offered: I. Prerequisites: BIOL 310 and CHEM 301, 301L, 302, 302L, or equivalents. Open to qualified seniors and graduate students only. Emphasizes a broad approach, at an advanced level, to human genetics. Explores topics including cytogenetics, pedigree analysis, gene mapping, aneuploid syndromes, inborn error of metabolism, neonatal screening, cancer, genetic engineering, behavior and intelligence, prenatal diagnosis, and genetic counseling.

**BIOL 540 Fundamentals of Molecular Genetics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 310 or consent of instructor. The basic principles and methodologies of molecular biology and genetics are applied to genome organization, replication, expression, regulation, mutation and reorganization. Emphasis will be placed on a broad introduction to and integration of important topics in prokaryotic and eukaryotic systems.

**BIOL 580 Eukaryotic Biotechnology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 310 and BIOL 310L, or graduate standing in biology or related fields. Open to qualified seniors and graduate students only. Discussion of principles, concepts, techniques, applications, and current advances in cellular and molecular biology aspects of biotechnology for animal and plant cells. The course will cover molecular construction of foreign genes; DNA cloning; technologies for DNA, RNA, and protein analyses; nonvector and vector-mediated genetic transformation; gene regulation in transgenic cells; cell and tissue culture; cell fusion; and agricultural, medical, and other industrial applications.

**BIOL 585 Virology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 16 credits in biology; a "C" grade or better in BIOL 218 or equivalent; eight credits in chemistry. Open to qualified seniors and graduate students only. A comprehensive introduction to virology encompassing viruses of vertebrates, invertebrates, plants, and bacteria. Topics include physical and chemical characterization, classification, detection, replication, genetics, diseases, immunology, epidemiology, and interactions of neuromotor disorders of infants and children. Critically surveys current theory and practice in neuromotor therapeutics for children and adults.

## Department of Chemistry

**Fred M. Hawkrige**

Professor and Department Chair (1976)  
B.S. 1966 University of Georgia  
Ph.D. 1971 University of Kentucky

Crawley, Charlene D. (1995) Assistant Professor  
B.S. 1978 and M.S. 1981 Virginia Commonwealth

University

Ph.D. 1986 University of Delaware

El-Shall, M. Samy (1989) Professor

B.S. 1976 and M.S. 1980 Cairo University

Ph.D. 1985 Georgetown University

Farrell, Nicholas P. (1993) Professor

B.S. 1969 University College, Dublin

Ph.D. 1973 University of Sussex

Fenn, John B. (1994) Research Professor

B.A. 1937 Berea College

Ph.D. 1940 Yale University

Houston, Todd (1996) Assistant Professor

B.S. 1987 Graceland College

Ph.D. 1993 University of Michigan

Hunnicutt, Sally S. (1998) Assistant Professor and Assistant Chair

A.B. 1983 Duke University

M.S. 1986 University of Utah

Ph.D. 1990 University of Cincinnati

Muddiman, David C. (1997) Assistant Professor

B.S. 1990 Gannon University

Ph.D. 1995 University of Pittsburgh

Ottenbrite, Raphael M. (1967) Professor

B.S. 1958 and M.S. 1960 Assumption University

Ph.D. 1967 University of Windsor

Qu, Yun (1993) Research Assistant Professor

M.S. 1982 and Ph.D. 1986 Nanjing University

Ruder, Suzanne M. (1988) Associate Professor

B.A. 1982 College of St. Benedict

Ph.D. 1986 Washington State University

Rutan, Sarah C. (1984) Professor

B.S. 1980 Bates College

M.S. 1983 and Ph.D. 1984 Washington State University

Shillady, Donald D. (1970) Professor

B.S. 1962 Drexel University

M.S. 1965 Princeton University

Ph.D. 1970 University of Virginia

Snedden, Albert T. (1977) Professor and Associate Dean,

College of Humanities and Sciences

B.S. 1968 Carnegie Mellon University

Ph.D. 1975 Brandeis University

Terner, James (1981) Professor

B.A. 1973 Brandeis University

Ph.D. 1979 University of California, Los Angeles

Topich, Joseph (1976) Associate Professor

B.A. Columbia University

Ph.D. 1974 Case Western Reserve University

Vallarino, Lidia M. (1980) Professor

Ph.D. 1954 University of Milano, Italy

Watton, Stephen P. (1997) Assistant Professor

B.S. 1985 King's College, London

Ph.D. 1991 Northwestern University

Wright, Michael E., Professor

B.S. 1979 San Diego State University

M.S. 1981 and Ph.D. 1983 University of Arizona

at Tucson

**Emeriti faculty**

Bass, R. Gerald (1962) Professor Emeritus

B.S. 1954 Virginia Tech

Ph.D. 1961 University of Virginia

Stump, Billy L., Professor Emeritus

B.S. 1952 Carson-Newman College

Ph.D. 1959 University of Tennessee

Winters, Lawrence J., Professor Emeritus

A.B. 1953 Washington University, St. Louis

Ph.D. 1959 University of Kansas

The curriculum in chemistry prepares students for graduate study and for admission to schools of medicine, dentistry and veterinary medicine. It also equips students to teach in secondary schools, or to work in chemical and industrial laboratories and in related fields of business and industry. The department also offers required and elective courses in chemistry to students in other programs of study.

The Department of Chemistry offers the bachelor of science program in chemistry. Under the Bachelor of Science Program, two options are available: the chemical science program and the professional chemist program.

The **Chemical Science Program** is tailored for the pre-professional study of the health sciences and other interdisciplinary areas where an emphasis on chemistry is sought.

Approved by the American Chemical Society Committee on Professional Training, the **Professional Chemist Program** requires a greater concentration in chemistry. Upon satisfactory completion of degree requirements, students are certified by the American Chemical Society.

### Extended Teacher Preparation Program

Chemistry majors interested in teaching careers in elementary, secondary or special education can enroll in an extended program that leads to the simultaneous awarding of a bachelor's degree in chemistry and a master's degree in teaching. For detailed information on this program contact the School of Education, Office of Academic Services.

### Pre-professional study for the health sciences

With the proper selection of electives, the B.S. degrees in chemistry satisfy admission requirements to most schools of medicine, dentistry and veterinary medicine.

### Master of science and doctoral programs in chemistry

For more information about these programs see the Graduate Bulletin.

### Degree requirements — Bachelor of science in chemistry

The Professional Chemists Track of the bachelor of science in chemistry requires a minimum of 120 credits, with at least 47 of those credits in chemistry.

For this program, German is recommended for the foreign language general education requirement. To determine the biology course to fulfill the general education natural science requirement, students should consult with their adviser in the College Advising Center or their chemistry adviser.

In addition to courses required for the bachelor of science in chemistry, additional courses that may be used in fulfillment of appropriate College of Humanities and Sciences general education requirements and undergraduate requirements are also required. These courses and their recommended sequence are listed.

**Freshman year.** CHEM 101-102 General Chemistry and CHEM 101L, 102L General Chemistry Laboratory I, II; MATH 200 Calculus with Analytic Geometry. (In preparation for MATH 200, all students must take the Mathematics Placement Test. Depending on the results, the student may be placed in MATH 151 Precalculus Mathematics.)

**Sophomore year.** CHEM 309, 309L Quantitative Analysis and Laboratory; CHEM 301-302 Organic Chemistry and CHEM 301L, 302L Organic Chemistry Laboratory I, II; MATH 201 Calculus with Analytic Geometry; MATH 307 Multivariate Calculus; PHYS 207-208 University Physics I, II.

**Junior year.** CHEM 303-304 Physical Chemistry, CHEM 304L Physical Chemistry Laboratory; MATH 301 Differential Equations.

**Senior year.** CHEM 406 Inorganic Chemistry, CHEM 409, 409L Instrumental Analysis and Laboratory, CHEM 510 Atomic and Molecular Structure, plus at least one course from CHEM 401 Synthetic and Qualitative Organic Chemistry, CHEM/BIOC 403-404 Biochemistry, CHEM/MEDC 310 Medicinal Chemistry and Drug Design, CHEM/EGRC 306 Industrial

Applications of Inorganic Chemistry, three credits of CHEM 492

Independent Study, three credits of CHEM 493 Chemistry Internship, or any CHEM 500-level course for which the prerequisites have been met.

The **Chemical Science Track** for the bachelor's degree in chemistry permits students to select more courses from other disciplines. With less stringent requirements in mathematics, physics and chemistry, this program is ideally suited for students planning to study medicine or dentistry.

It requires a minimum of 120 credits, with at least 35 of those credits in chemistry. German is recommended as the foreign language general education requirement. To determine the biology course to fulfill the general education natural science requirement, students should consult their adviser in the Office of Academic Advising or their chemistry adviser.

In addition to the courses required for the bachelor's degree in chemistry, this program also requires courses that may be used to fulfill appropriate College of Humanities and Sciences general education requirements and undergraduate requirements. These courses and their recommended sequence are listed.

**Freshman year.** CHEM 101-102 General Chemistry and CHEM 101L, 102L General Chemistry Laboratory I, II; MATH 200 Calculus with Analytical Geometry. (In preparation for MATH 200, all students must take the Mathematics Placement Test. Depending on the results, the student may be placed in MATH 151 Precalculus Mathematics.)

**Sophomore year.** CHEM 309, 309L Quantitative Analysis and Laboratory; CHEM 301-302 Organic Chemistry and CHEM 301L-302L Organic Chemistry Laboratory I, II; MATH 201 Calculus with Analytic Geometry; PHYS 207-208 University Physics I-II; or PHYS 201-202 General Physics.

**Junior year.** CHEM 303-304 Physical Chemistry and CHEM 304L Physical Chemistry Laboratory.

**Senior year.** Approved chemistry electives three credits minimum — may include CHEM/BIOC 403 Biochemistry or CHEM/MEDC 310 Medicinal Chemistry and Drug Design, or CHEM/EGRC 306 Industrial Applications of Inorganic Chemistry.

## Transfer students

Transfer students intending to major in chemistry must satisfy all chemistry major course requirements and complete a minimum of nine credits of VCU chemistry courses at the 300, 400 or 500 level of which no more than three credits may be CHEM 492 or CHEM 493. This restriction applies to all chemistry degrees.

## Minor in chemistry

The minor in chemistry requires the following courses: CHEM 101-102 and 101L, 102L General Chemistry and Laboratory; CHEM 301-302 and 301L, 302L Organic Chemistry and Laboratory; and either CHEM 309 and 309L Quantitative Analysis and Laboratory or CHEM 303 Physical Chemistry. All 300-level chemistry courses must be taken at VCU. Consult course descriptions for prerequisites in mathematics and physics.

## Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in chemistry. A full description of the program appears in Part XX of this bulletin.

## Courses in chemistry (CHEM)

**In chemistry laboratories each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.**

### CHEM 100 Introductory Chemistry.

Semester course; 3 lecture and 1 problem session hour. 3 credits. Prerequisite: Students must be eligible to take MATH 131 or higher. A course in the elementary principles of chemistry for individuals who do not meet the criteria for enrollment in CHEM 101; required for all students without a high school chemistry background who need to take CHEM 101-102. These credits may not be used to satisfy any chemistry course requirements in the College of Humanities and Sciences.

### CHEM 101-102 General Chemistry.

Continuous course; 3 lecture and 1 recitation hour. 4-4 credits. Prerequisite: CHEM 100 with a grade of "C" or higher, or a satisfactory score on the Chemistry Placement Test. Pre or corequisite: MATH 151. Fundamental principles and theories of chemistry, including qualitative analysis.

### CHEM 101L General Chemistry Laboratory I.

Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: CHEM 101. Experimental work correlated with CHEM 101. Each student is charged for breakage incurred.

Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

### CHEM 102L General Chemistry Laboratory II.

Semester course; 3 laboratory hours. 1 credit. Prerequisite: CHEM 101L. Pre- or corequisite: CHEM 102. Experimental work includes qualitative analysis. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

### CHEM 110 Chemistry and Society.

Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are presented through the use of decision-making activities related to real-world societal issues. Not applicable for credit towards the B.S. degree in chemistry.

### CHEM 110L Chemistry and Society Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: CHEM 110. Experimental work correlated with CHEM 110. Not applicable for credit toward the B.S. degree in chemistry. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

### CHEM 112 Chemistry in the News.

Semester course; 3 lecture hours. 3 credits. The basic principles of chemistry are used to interpret newspaper and magazine articles of current interest relating to chemistry in manufacturing, the global environment and medicine. Not applicable for credit towards the B.S. degree in Chemistry.

### CHEM 121/ENGR 121 Materials Chemistry I.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: ENGR 101 and CHEM/ENGR 121 or CHEM 102. Pre or corequisite: MATH 200. Basic concepts of molecular structure and bonding, thermodynamics, and kinetics. Models of atoms and molecules; covalent, ionic and metallic bonds; intermolecular forces; the gas laws, chemical equilibrium, and chemistry of acids and bases; the first and second laws of thermodynamics; chemical kinetics; the ideal (defect-free) solid state. Students cannot receive credit for both CHEM 121/ENGR 121 and CHEM 101-102.

### CHEM 122/ENGR 122 Materials Chemistry II.

Semester course; 2 lecture and 2 recitation hours. 4 credits. Prerequisites: ENGR 101 and CHEM/ENGR 121 or CHEM 102. Pre- or corequisite: MATH 201. Defects in solids and their role in dictating mechanical and electrical properties; glasses; phase diagrams; time-temperature-transformation diagrams; classes of materials (metals, ceramics, polymers and semiconductors); technology of materials systems.

### CHEM 301-302 Organic Chemistry.

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: CHEM 101, 102, 101L and 102L. A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms, and stereochemistry.

### CHEM 301L Organic Chemistry Laboratory I.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 101, 102, 101L and 102L. Pre or corequisite: CHEM 301. Experimental work correlated with CHEM 301. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

### CHEM 302L Organic Chemistry Laboratory II.

Semester course; 4 laboratory hours. 2 credits. Prerequisites: CHEM 101, 102, 101L, 102L and 301L. Prerequisite or corequisite: CHEM 302. Experimental work correlated with CHEM 302. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

### CHEM 303 Physical Chemistry.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, 102L, PHYS 201-202 or 207, 208, and MATH 200-201. Ideal and nonideal gases, thermodynamics, free energy, and chemical equilibrium.

### CHEM 304 Physical Chemistry.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, 102L and 303. Kinetics, solution thermodynamics, heterogeneous equilibria, electrochemistry, and introductory biophysical chemistry.

### CHEM 304L Physical Chemistry Laboratory.

Semester course; 6 laboratory hours. 2 credits. Prerequisites: CHEM 101, 102, 101L, 102L and 309. Corequisite: CHEM 304. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

### CHEM 306/EGRC 306 Industrial Applications of Inorganic Chemistry.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, and 102L. Chemical engineering students: EGRC 320, ENGR 301, and ENGR 304; chemistry students: CHEM 302 and 302L. A study and analysis of the most important industrial applications of inorganic chemistry, with emphasis on structure/properties correlation, materials and energy balance, availability and logistics of starting materials, economic impact and environmental effects.

### CHEM 309 Quantitative Analysis.

Semester course; 2 lecture hours. 2 credits. Prerequisites: CHEM 101, 102, 101L, 102L, and MATH 151 or equivalent. Theory and practice of gravimetric, volumetric, and instrumental analysis techniques, treatment of multiple equilibria in aqueous solutions.

### CHEM 309L Quantitative Analysis Laboratory.

Semester course; 6 laboratory hours. 2 credits. Prerequisites: CHEM 101, 102, 101L, and 102L. Pre or corequisite: CHEM 309. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

**CHEM 310/MEDC 310 Medicinal Chemistry and Drug Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: One year of organic chemistry. This course is designed to expose undergraduate chemistry, biology, and pre-medicine majors to the history, theory and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis also will be placed on the methods used by medicinal chemists to design new drugs.

**CHEM 322/EGRC 322 Organic Chemistry II for Chemical Engineers.**

Semester course; 3 lecture hours. 3 credits. Required course. Prerequisite: CHEM 301 or equivalent. Introduction to industrial organic chemistry with emphasis on chemical feedstocks and petrochemicals, monomers and polymers, biotechnology and fermentation, and fine chemicals and pharmaceuticals. Ideas from chemical process design and economics are introduced through selected case studies.

**CHEM 391 Topics in Chemistry.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all chemistry topics courses may be applied to the major. Prerequisites: CHEM 101, 102, 101L, and 102L. A study of a selected topic in chemistry. See Schedule of Classes for specific topics to be offered and prerequisites.

**CHEM 401 Methods of Organic Synthesis.**

Semester course; 2 lecture and 6 laboratory hours. 4 credits. Prerequisites: CHEM 101, 102, 101L, 102L, 301-302 and 301L-302L. Theory and laboratory practice of multistep organic syntheses. Spectroscopic analysis of organic compounds with emphasis on <sup>1</sup>H and <sup>13</sup>C NMR and mass spectroscopy.

**CHEM 403/BIOC 403 Biochemistry.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, 102L, and 301-302 or equivalents with permission of instructor. A presentation of structural biochemistry, enzymology, biophysical techniques, bioenergetics, and an introduction to intermediary metabolism.

**CHEM 404/BIOC 404 Biochemistry.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, 102L, and 301-302 or equivalents with permission of instructor. A presentation of intermediary metabolism, regulation, molecular genetics, biochemistry of nutrition, and selected topics of physiological/medical significance.

**CHEM 406 Inorganic Chemistry.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, 102L, 303 and 304. Advanced treatment of atomic structure, chemical bonding, properties of the elements, metal complexes, acid-base theory, and related subjects.

**CHEM 406L Inorganic Chemistry Laboratory.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: CHEM 101, 102, 101L, and 102L. Pre or corequisite: CHEM 406. Examination of inorganic nonmetal, transition metal, and organometallic compounds using modern

inorganic methods of synthesis and characterization. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

**CHEM 409 Instrumental Analysis.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CHEM 101, 102, 101L, 102L, 301-302, 303-304, and 309 with laboratories. Theory and practice of modern spectrophotometric, electroanalytical, and chromatographic and nuclear magnetic resonance methods.

**CHEM 409L Instrumental Analysis Laboratory.**

Semester course; 4 laboratory hours. 1 credit. Prerequisites: CHEM 101, 102, 101L, 102L, 301-302, 303-304, and 309 with laboratories. Each student is charged for breakage incurred. Approved safety glasses are required. Failure to check out of laboratory, upon withdrawal or for other reasons, will incur a charge, billed from the Office of Student Accounting.

**CHEM 491 Topics in Chemistry.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all chemistry topics courses may be applied to the major. Prerequisites: CHEM 101, 102, 101L, and 102L. A study of a selected topic in chemistry. See the Schedule of Classes for specific topics to be offered and prerequisites.

**CHEM 492 Independent Study.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of eight credits for all independent study courses. Prerequisites: CHEM 101, 102, 101L, and 102L. Open generally to students of junior or senior standing who have completed CHEM 302, CHEM 302L, and CHEM 309 and have a minimum GPA of 2.5 in chemistry courses. A determination of the amount of credit and the written permission of both the instructor and the department must be procured prior to registration for the course. Investigation of chemical problems through literature search and laboratory experimentation. Written progress and final reports will be required.

**CHEM 493 Chemistry Internship.**

Semester course; variable credit. Maximum of three credits; one credit will be given for each 150 hours (approximately one month) of part-time or full-time chemical work experience. Prerequisites: CHEM 101, 102, 101L, and 102L. Open to students who have completed 24 credits in chemistry. Permission of adviser and department chair must be obtained prior to registration for the course. Acquisition of chemistry laboratory experience through involvement in a professional chemistry setting. Written progress and final reports will be required.

**CHEM 510 Atomic and Molecular Structure.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 and PHYS 208. Survey of the pertinent aspects of quantum mechanics. Line spectra, atomic structure, and molecular bonding.

**Computer science**

The bachelor of science in computer science and the bachelor of science in computer science/mathematical sciences are offered by the Department of Mathematical Sciences. A minor in computer science also is available. For further information about these programs read the section of this bulletin under the heading "Department of Mathematical Sciences."

**Department of Criminal Justice****Jay S. Albanese**

Professor and Department Chair (1996)

B.A. 1974 Niagara University

M.A. 1976 and Ph.D. 1981 Rutgers University

Byrd, Jason H.\* (2000) Assistant Professor

B.S. 1993 University of Florida

M.S. 1995 and Ph.D. 1998 University of Florida

Geary, David P. (1982) Associate Professor

B.A. LaVerne College

M.P.A. University of Southern California

Ph.D. 1979 Marquette University

Gordon, Jill A. (1996) Assistant Professor

B.S. 1990 Bowling Green State University

M.S. 1996 and Ph.D. 1996 University of Cincinnati

Gottfredson, Stephen D. (1997) Professor and Dean

B.A. University of Oregon

M.A. and Ph.D. Johns Hopkins University

Grant, Patricia (1999) Instructor

B.S. Virginia Commonwealth University

M.S. and Ph.D. (Cand.) Virginia Commonwealth University

Hague, James L. (1970) Professor

B.A. 1963 Washington and Lee University

J.D. 1966 University of Michigan

L.L.D. 1976 University of Virginia

Moriarty, Laura J. (1993) Associate Professor and Assistant Dean

B.C.J. 1984 and M.S. 1985 Louisiana

State University

Ph.D. 1988 Sam Houston State University

Pelfrey, William V. (1992) Professor

B.A. 1969 Auburn University

M.S. 1975 University of Alabama

Ph.D. 1978 Florida State University

Six, Tamson L. (1999) Instructor

B.A. East Stroudsburg University

M.Ed. and Ph.D. University of Virginia

Smith, Michael R. (1997) Assistant Professor

B.S. 1987 Virginia Commonwealth University

J.D. 1993 University of South Carolina School of Law

Ph.D. 1996 Arizona State University

**Emeriti faculty**

Hooker, James E., Associate Professor Emeritus

B.S. 1964 and M.S. 1965 Washington State University

\* Joint appointment

The major objective of this degree program is to prepare students for effective professional careers in criminal justice, public service and other helping professions, and/or prepare them to pursue studies in law. Career opportunities are available in federal, state, local and private justice-related endeavors.

These careers include law enforcement, juvenile justice, corrections and the courts. This department also prepares students wishing to enter law school and those wishing to pursue graduate studies in criminal justice or in several of the human services, usually related to justice. This department offers and encourages in-service justice employees and others, to enhance their professional career development through higher education.

Students majoring in criminal justice receive a broad educational background, professionally oriented courses in their special area of interest, and various skill courses designed to enhance the student's career opportunities. Through core courses and electives in the major approved by the student's adviser, students have the opportunity to orient their course work to fit their educational objectives and career plans.

It is essential that students seek and follow the advice of their adviser in the progression of the core courses, the selection of criminal justice electives and in the identification of complementary courses in other disciplines which can benefit the student and assist in the accomplishment of career goals. Whether the student is interested in general criminal justice, policing, legal studies, juvenile justice or corrections, faculty and advisers can assist in identifying the appropriate curriculum.

## Degree requirements

**Bachelor of Science in Criminal Justice Program.** The Bachelor of Science in Criminal Justice Program requires a minimum of 120 credits, including 36 credits in criminal justice courses. Students will complete 18 credits in core courses and 18 credits in criminal justice electives.

### Criminal justice core – 18 credits

Required courses for all criminal justice majors:

CRJS 181 Justice System Survey

CRJS 260 Criminal Law

CRJS 355 Foundations of Criminal Justice

CRJS 380 Research Methods in Criminal Justice

CRJS 475 Case Studies in Criminal Procedure

CRJS 480, 492 or 493 application component

### Criminal justice approved electives – 18 credits

Selected from other criminal justice courses with adviser's approval.

## Minor in criminal justice

A minor in criminal justice requires a minimum of 18 credits. Students desiring a minor in criminal justice must complete, with a "C" average overall, each of the following courses:

CRJS 181 Justice System Survey

CRJS 260 Criminal Law

CRJS 355 Foundations of Criminal Justice

CRJS 475 Case Studies in Criminal Procedure

Criminal justice elective\*

Criminal justice elective\*

\* CRJS 492 and 493 are not available to those minoring in criminal justice.

## Master of science in criminal justice

The graduate degree program in criminal justice is designed to provide advanced educational preparation for practitioners and students pursuing careers in criminal justice or forensic science. Such preparation includes understanding appropriate theoretical positions and concepts, and developing necessary professional skills. The master's degree requires 36 credit hours. See the Graduate Bulletin for a more detailed description of this program and the post-baccalaureate certificate program.

## Courses in criminal justice (CRJS)

### CRJS 180 Introduction to Forensic Science.

Semester course; 1 lecture hour. 1 credit. Forensic Science is the application of scientific methods to crime, investigation and criminal identification. This short course will present the nature and scope of the field of forensic science and the precise ways in which law and science intersect. The scientific basis for behavioral prediction and classification (profiling) will be reviewed as will the natural science skills required for those entering the field, and career opportunities will be described.

### CRJS 181 Justice System Survey.

Semester course; 3 lecture hours. 3 credits. Comprehensive overview of criminal justice; assesses the extent of crime; reviews law enforcement, judicial and correctional processes at all levels of government; discusses history and philosophy of public safety; evaluates career opportunities.

### CRJS 252 Introduction to the Juvenile Justice System.

Semester course; 3 lecture hours. 3 credits. This survey course studies all segments of juvenile justice and special procedures designed for young persons; recognizes the importance of proper handling of the juvenile by the police and the courts; reviews recent developments in juvenile rehabilitation.

### CRJS 253 Introduction to Corrections.

Semester course; 3 lecture hours. 3 credits. A survey of societal responses to the offender; traces the evolution of practices based on philosophies of retribution, punishment, and rehabilitation; reviews contemporary correctional activities and their relationships to other aspects of the criminal justice system; introduces the emerging area of correctional programming within the community.

### CRJS 254 Introduction to Policing.

Semester course; 3 lecture hours. 3 credits. A survey of different facets of law enforcement including the activities of public police agencies and private security organizations. Assesses changes in law enforcement philosophy and practices, police relationships with the public and the political arena, and anticipated future trends in policing.

### CRJS 255 Introduction to Legal Studies.

Semester course; 3 lecture hours. 3 credits. Overview of the American legal system, processes, terminology; analysis of historical and philosophical bases of law. Examines the systems that adjudicate criminal and civil law; considers the role of law in the functioning of the justice system.

### CRJS 260 Criminal Law.

Semester course; 3 lecture hours. 3 credits. Deals with the definition and processing of substantive offenses along with the bases of criminal liability, defenses, and complicity. Covers the scope of individual rights under due process, emphasizing arrest, interrogations, search and seizure.

### CRJS 300 Forensic Criminology.

Semester course; 3 lecture hours. 3 credits. The intersection of law, predictions of dangerousness, mental disorder and crime. Behavioral prediction, classification and the development of typologies of offenses and offending will be considered. Issues in the use of clinical and statistical prediction methods in criminal justice will be presented.

### CRJS 305 Policing Theories and Practice.

Semester course; 3 lecture hours. 3 credits. An overview of the nature and application of law enforcement theory. Examines the theoretical underpinnings of a variety of law enforcement practices, with emphasis on evolving trends.

### CRJS 324 Courts and the Judicial Process.

Semester course; 3 lecture hours. 3 credits. Examines the systems that adjudicate criminal and civil law; includes constitutional authority, jurisdictions, and trial processes, with particular emphasis on reform in court administration, disposition without trial and sentencing.

### CRJS 350 Evaluation and Treatment of the Offender.

Semester course; 3 lecture hours. 3 credits. An analysis of the issues and procedures involved in evaluating individual

differences in offenders and among classes of offenders; current diagnostic and treatment methods are discussed; introduces the student to case analysis and correctional counseling techniques. Includes analysis of evaluation and treatment resources external to corrections.

#### **CRJS 351 Community-Based Correctional Programs.**

Semester course; 3 lecture hours. 3 credits. A comprehensive review of various community-based rehabilitation and treatment efforts; includes analysis of probation, parole, work release, halfway houses, and other methods of reintegrating the offender into society.

#### **CRJS 352 Crime and Delinquency Prevention.**

Semester course; 3 lecture hours. 3 credits. Review and analysis of the problems associated with prevention of crime and delinquency, viewed in a total systems context. Programs and activities involving citizen, community, and agency interrelationships will be developed and examined. Students are responsible for preparing and evaluating projects with crime preventive goals.

#### **CRJS 355 Foundations of Criminal Justice.**

Semester course; 3 lecture hours. 3 credits. An examination of the intellectual underpinnings of the criminal justice system. This will include analysis of evolving values and ideas regarding social control, individual and collective responsibilities and rights, the role of punishment, politics and the law, practitioners as public servants, and criminological and other foundations of the criminal justice system.

#### **CRJS 358 Lawyer's Role in the Justice System.**

Semester course; 3 lecture hours. 3 credits. Examines the multiple responsibilities of lawyers from an historical and contemporary perspective. The basic techniques of the lawyer's craft will be studied with emphasis placed on case advocacy, negotiation skills and legal reasoning, and problem solving.

#### **CRJS 363 Correctional Law.**

Semester course; 3 lecture hours. 3 credits. Examines the legal rights of both the offender and the correctional worker. Attention is given to case law and legal decisions affecting policies and procedures in probation, correctional settings, and parole. Trends influencing correctional programming and management activities will be projected.

#### **CRJS 370 Criminalistics and Crime Analysis.**

Semester course; 3 lecture hours. 3 credits. A comprehensive evaluation of current developments in research, instrumentation, and laboratory technology utilized to detect, identify, analyze, and compare demonstrate evidence.

#### **CRJS 370L Criminalistics and Crime Analysis Laboratory.**

Semester course; 4 laboratory hours. 3 credits. Corequisite: CRJS 370. Experimental work associated with CRJS 370. Application of forensic science laboratory techniques to the analysis of fingerprints, unknown chemicals, physical evidence and biological clues.

#### **CRJS 375 Forensic Evidence, Law and Criminal Procedure.**

Semester course; 3 lecture hours. 3 credits. The law of criminal procedure and rules of evidence as applied to forensic science. Issues of scientific versus legal burdens of proof, legal terminology and trial procedure will be presented.

#### **CRJS 378 Juvenile Justice Law and Process.**

Semester course; 3 lecture hours. 3 credits. Examines the juvenile court as an institution; its jurisdiction and procedures. Considers intake, pretrial diversion, and hearings, as well as rights and liabilities of the delinquent, dependent and neglected child. Contrasts juvenile and adult law; projects future impact of the court.

#### **CRJS 380 Research Methods in Criminal Justice.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Statistics or permission of instructor. Designed to familiarize the student with current and applied research methods in criminal justice, including the application of data and information processing techniques and procedures; analyzes research in criminal justice journals and government reports; and enhances the capability to evaluate contemporary research.

#### **CRJS 382/WMNS 382 Women in the Justice System.**

Semester course; 3 lecture hours. 3 credits. Surveys the special situation of women in the justice system as offenders, as victims, and as professional practitioners. Applicable laws and public policy are studied in detail. Issues are punctuated by field trips to juvenile/adult programs and institutions.

#### **CRJS 394 Field Service in Criminal Justice.**

1 credit. Designed to provide the student with an opportunity to participate as a volunteer worker in a criminal justice agency. Offers actual experience as an agency volunteer under the general supervision of a faculty member. An application is required a semester in advance. Graded as pass/fail.

#### **CRJS 432 Criminal Justice: Organizations.**

Semester course; 3 lecture hours. 3 credits. Considers the behavioral dimensions of administrations in criminal justice and public safety agencies. Examines the concepts of leadership and decision making and the effect of environmental dynamics in the management of the criminal justice system.

#### **CRJS 434 Police Administration.**

Semester course; 3 lecture hours. 3 credits. Examines major management concepts and principles with special emphasis on consideration of law enforcement. Policies and procedures formulated and followed by managers in law enforcement settings will be evaluated from a structural as well as a functional perspective. Contemporary and anticipated future problems, challenges and trends facing police managers will be addressed.

#### **CRJS 463 Comparative Criminal Justice Systems.**

Semester course; 3 lecture hours. 3 credits. Study of national and international criminal justice systems with an emphasis on historical, cultural, and operational comparisons. Contemporary research relating to law enforcement, adjudicative, and correctional systems will be considered.

#### **CRJS 468 Economic and Organized Crime.**

Semester course; 3 lecture hours. 3 credits. Analysis of the types of offenses which occur in the business and governmental work and the consequences of illegal practices. Primary attention will address the public sector through the methods utilized to detect and investigate criminal activities affecting governmental units. Relationships to organized crime will be described for each of the specific topics and techniques.

#### **CRJS 475 Case Studies in Criminal Procedure.**

Semester course; 3 lecture hours. 3 credits. Analyzes case studies reflecting the supervisory role of the courts over the prosecutorial use of testimonial and nontestimonial evidence; examines by actual cases the judicial interpretive processes by which the public safety is balanced with individual rights.

#### **CRJS 480 Senior Seminar.**

Semester course; 3 lecture hours. 3 credits. A capstone course designed to assist students to apply and to think critically about current knowledge regarding crime, crime trends, law, law enforcement, the adjudication process, corrections, and crime prevention. Scenarios, research, projections, and evaluation of different viewpoints will be employed to develop the student's ability to assess methods of argumentation, use information, and apply existing knowledge to new fact situations. A writing intensive course restricted to seniors in criminal justice.

#### **CRJS 491 Topics in Criminal Justice.**

Semester course; 1-3 lecture hours. 1-3 credits. In-depth examination of selected administration of justice topics. See the Schedule of Classes for specific topics and prerequisites.

#### **CRJS 492 Directed Individual Study.**

Semester course; variable; 1, 2, 3 credits. Maximum total of six credits. Available to all other criminal justice students who are seniors and have a 3.0 or above GPA (with permission of department chair) as a substitute for a major elective course. Provides an independent study opportunity for the adult student who is (or was) employed in a criminal justice, safety, or risk administration position and who does not require internship or volunteer experience.

#### **CRJS 493 Internship.**

Semester course; 3 or 6 credits. Field internship allows the student to relate theory to practice through observation and experience; must be performed in an approved agency or organizational setting under the supervision of a faculty member. An application is required a semester in advance. Graded as pass/fail.

## **Department of Economics**

### **Edward L. Millner**

Professor and Department Chair (1998)

B.A. 1974 Hampden Sydney College

Ph.D. 1982 University of North Carolina, Chapel Hill

Economics is the science of human choice, the study of how scarce

resources are allocated among competing uses to satisfy human wants. Since many choices analyzed are made by or affect business decision-makers, economics is a unique blend of liberal arts and business. Therefore, the Department of Economics offers a bachelor of science in economics conferred by the College of Humanities and Science with a core of liberal arts courses, as well as a bachelor of science in economics conferred by the School of Business with a core of business courses. For further information on this second program see the School of Business section of this bulletin.

Economics teaches students how to analyze data and information and how to think strategically about business decision making. Because of their broad analytical, quantitative and decision-making skills, students who major in economics are sought for a wide array of positions in management and sales. For example, firms hire economics majors as bank examiners, consultants, financial advisers, managers and sales personnel. Economics is excellent preparation for almost any job with the word "analyst" in its title — such as business, credit, economic, financial, market research or risk analyst. A degree in economics also is excellent preparation for entrepreneurship or for graduate studies in business, law or medicine.

### Degree requirements

**Bachelor of science in economics.** The bachelor of science curriculum in economics requires a minimum of 120 credits, with at least 33 of those credits in the major and three credits in STAT 210 Basic Practice of Statistics.

Students majoring in economics must complete ECON 210-211 Principles of Economics; ECON 301 Microeconomic Theory; ECON 302 Macroeconomic Theory; ECON 307 Money and Banking; ECON 489 Senior Seminar in Economics; STAT 210 Basic Practice of Statistics; and an additional 15 credits of electives in upper-level (300-400) economics courses.

In addition to these requirements, students in this program also must take one course in computer science, preferably CMSC 128 Computer Concepts and Applications. Students also must complete MATH 141 Algebra with Applications to fulfill the general education mathematics requirement for

the College of Humanities and Sciences.

Economics majors are strongly encouraged to take additional courses in statistics and mathematics, **especially** if they intend to pursue either careers as practicing economists or graduate study in economics or business. Recommended mathematics courses include one or more of the following courses: MATH 151 Precalculus Mathematics, MATH 185 Computational Linear Algebra, MATH 200 Calculus with Analytical Geometry, MGMT 171 Mathematical Applications for Business, MGMT 212 Differential Calculus and Optimization for Business. Recommended statistics courses include one or more of the following courses: MGMT 302 Business Statistics, ECON 401 Introductory Econometrics, STAT 212 Concepts of Statistics, or STAT 214 Applications of Statistics. Students should consult with their advisers to determine which of these courses fit their particular interests and backgrounds.

In selecting approved electives to meet the general requirements of the College of Humanities and Sciences, students should select courses related to the economics major — specifically, courses in accounting, mathematics and statistics, philosophy, history, political science, sociology, anthropology and finance. Students should focus their electives on one or two of these subjects.

Juniors, seniors and graduate students who have completed baccalaureate degrees are eligible for enrollment in most upper-level (300-400) economics and business courses.

### Minor in economics

This minor, offered through the College of Humanities and Sciences, requires at least 18 credits in the minor field including ECON 210-211 Principles of Economics; one or more courses from ECON 301 Microeconomic Theory, ECON 302 Macroeconomic Theory, or ECON 303 Managerial Economics. The remaining courses to fill this requirement must be chosen from upper-level (300-400) economics courses.

### Cooperative Education Program

This program is available to qualifying students pursuing undergraduate degrees in economics. A full description of the program appears in Part XX of this bulletin.

## Department of English

### Marcel Cornis-Pope

Professor and Department Chair (1988)  
B.A. and M.A. 1968 University of Cluj, Romania  
Ph.D. 1979 University of Timisoara, Romania

### Nicholas A. Sharp

Associate Chair and Assistant Professor (1971)  
B.A. 1966 University of Kansas  
M.A. 1968 and Ph.D. 1971 Ohio State University

### Elizabeth J. Cooper

Professor and Director of Composition and Rhetoric (1991)  
B.A. 1962 and M.A. 1963 University of Arkansas, Fayetteville  
Ph.D. 1976 University of North Carolina, Chapel Hill

### Catherine E. Ingrassia

Associate Professor and Director of the M.A. Program (1992)  
B.A. 1984 Grinnell College  
M.A. 1987 and Ph.D. 1992 University of Texas, Austin

### Lawrence F. Laban

Assistant Professor and Director of Undergraduate Studies (1971)  
B.A. 1967 City College of New York  
Ph.D. 1973 Indiana University

### Gregory E. Donovan

Associate Professor and Director of Creative Writing (1983)  
B.A. University of Missouri at Columbia  
M.A. 1979 University of Utah  
Ph.D. 1983 State University of New York, Binghamton

Bassard, Katherine C. (1999) Associate Professor  
B.A. 1981 Wake Forest University  
M.A. 1986 Virginia Commonwealth University  
Ph.D. 1992 Rutgers University

Berry, Boyd M. (1974) Associate Professor  
B.A. 1961 Harvard College  
M.A. 1962 and Ph.D. 1966 University of Michigan

Brinegar, John (1999) Instructor  
B.A. 1992 University of Oregon  
M.A. 1994 University of North Carolina

Browder, Laura (1994) Assistant Professor  
B.A. 1982 Brown University  
M.A. 1985 Boston University  
Ph.D. 1993 Brandeis University

Coppedge, Walter R. (1968) Professor  
B.A. 1952 University of Mississippi  
B.Litt. 1958 Oxford University  
M.A. 1963 Memphis State University  
M.A. 1967 and Ph.D. 1968 Indiana University

DeHaven, Thomas (1990) Professor  
B.A. 1971 Rutgers University  
M.F.A. 1973 Bowling Green State University

Entzminger, Bettina I. (1998) Instructor  
B.A. 1989 University of South Carolina  
M.A. 1993 and Ph.D. 1998 University of North Carolina

Fine, Richard A. (1979) Professor  
 A.B. 1973 Brown University  
 M.A. 1975 and Ph.D. 1979 University of Pennsylvania

Frankel, Nicholas (1997) Assistant Professor  
 B.A. 1984 Oxford  
 M.A. 1988 University of Southern California  
 Ph.D. 1994 University of Virginia

Golden, B. Marita (1994) Professor  
 B.A. 1972 American University  
 M.S. 1973 Columbia University

Griffin, Claudius W. (1969) Professor  
 B.S. 1958 and M.A. 1960 University of Richmond  
 Ph.D. 1972 Indiana University

Harkness, Marguerite (1975) Associate Professor  
 B.S. University of Illinois  
 M.A. 1971 and Ph.D. 1974 State University of New York, Binghamton

Hodges, Elizabeth S. (1989) Associate Professor  
 B.A. 1975 Syracuse University  
 M.A. 1981 Pennsylvania State University  
 Ph.D. 1988 University of Pennsylvania

Hummer, T. R. (1997) Professor  
 B.A. 1972 and M.A. 1974 University of Southern Mississippi  
 Ph.D. 1980 University of Utah

Keller, Michael A. (1989) Lecturer  
 B.A. 1985 James Madison University  
 M.F.A. 1989 Virginia Commonwealth University

Kinney, James J. (1977) Professor  
 B.A. 1964 St. Bonaventure University  
 Ph.D. 1972 University of Tennessee

Kuhn, Elisabeth D. (1989) Associate Professor  
 M.A. 1981 University of Frankfurt, Germany  
 M.J. 1988 and Ph.D. 1989 University of California, Berkeley

Latané, David (1984) Associate Professor  
 B.A. 1974 Roanoke College  
 M.A. 1976 University of Vermont  
 Ph.D. 1983 Duke University

Longest, George C. (1963) Associate Professor  
 B.A. 1960 and M.A. 1961 University of Richmond  
 Ph.D. 1969 University of Georgia

Mangum, Anthony B. (1971) Professor  
 B.A. 1965 University of North Carolina  
 M.A. and Ph.D. 1974 University of South Carolina

Morse, Charlotte C. (1976) Professor  
 A.B. 1964 Brown University  
 M.A. 1968 and Ph.D. 1970 Stanford University

Oggel, L. Terry (1988) Professor and Associate Director of School of Mass Communications  
 B.A. 1961 Monmouth College  
 M.A. 1963 Kent State University  
 Ph.D. 1969 University of Wisconsin

Perry, Patricia H. (1993) Associate Professor  
 B.A. 1979 and M.L.S. 1982 North Carolina Central University  
 Ph.D. 1991 State University of New York, Stony Brook

Priebe, Richard K. (1973) Professor  
 B.A. 1964 Franklin and Marshall College  
 M.S. 1968 University of Michigan  
 Ph.D. 1973 University of Texas, Austin

Sange, Gary R. (1973) Associate Professor  
 B.A. 1961 and M.A. 1963 San Francisco State College  
 M.F.A. 1973 University of Iowa

Savage, Elizabeth A. (1998) Instructor  
 B.A. 1988 James Madison University  
 M.A. 1990 Boston College  
 Ph.D. 1998 Duquesne University

Shimomura, Sachi (2000) Assistant Professor  
 A.B. 1991 Stanford University  
 M.A. 1996 and Ph.D. 1999 Cornell University

Silverman, Jonathon (1998) Instructor  
 B.A. 1987 Dartmouth College  
 M.A. 1992 and Ph.D. 1998 University of Texas

Tester, William (1997) Assistant Professor  
 B.A. 1984 Columbia University  
 M.F.A. 1995 Syracuse University

Winston, Janet (1999) Assistant Professor  
 B.A. 1984 University of California, Los Angeles  
 Ph.D. 1998 University of Iowa

Woodlief, Annette M. (1972) Associate Professor  
 B.A. 1961 and M.A. 1963 Wake Forest University  
 Ph.D. 1972 University of North Carolina

#### Emeriti faculty

Armour, Robert A., Professor Emeritus  
 B.A. Randolph-Macon College  
 M.A. Vanderbilt University  
 Ph.D. University of Georgia

Dance, Daryl C., Professor Emerita  
 A.B. Virginia State College  
 M.A. Virginia State College  
 Ph.D. University of Virginia

Duke, Elizabeth A., Associate Professor Emerita  
 B.A. Longwood College  
 M.A. University of Virginia  
 Ph.D. University of Iowa

Duke, J. Maurice, Professor Emeritus  
 B.A. College of William and Mary  
 M.A. and Ph.D. University of Iowa

Marshall, Paule, Professor Emeritus  
 B.A. Brooklyn College

Pendleton, James D., Professor Emeritus  
 B.S. Davidson College  
 M.A. University of North Carolina

Reynolds, Elizabeth R., Professor Emerita  
 B.A. Winthrop College  
 M.A. Columbia University  
 Ph.D. University of South Carolina

The purpose of the Department of English is to teach students to see their worlds with clarity and respond to them with sensitivity, through reading and writing. Students are invited to read and explore a diversity of texts created in different times and voices and then to respond to these texts variously and critically, situating them within their contexts and discerning their important aesthetic features, rhetorical elements and social functions.

Students in this department also are encouraged to express themselves in expository or imaginative works that engage thought and feeling, evince purpose clearly, marshal appropriate evidence, and observe principles of rhetorical decorum.

The Department of English offers the bachelor of arts in English, which provides a broad liberal arts base for advanced study and for careers in academic and professional areas.

English majors interested in careers in early, middle, secondary or special education can enroll in the Extended Teacher Preparation Program which results in the simultaneous awarding of a bachelor's degree in English and a master's degree in teaching. For more information about this program administered jointly by the College of Humanities and Sciences and the School of Education contact the School of Education's Office of Academic Services.

The department also offers required and elective courses in English composition, language and literature for English majors and for students in other programs.

#### Degree requirements

**Bachelor of arts in English.** The bachelor of arts in English requires a minimum of 120 credits, with at least 36 of those credits in the major, three of which fulfill the general education literature requirement. A minimum of 33 credits must be taken in upper-level (300, 400, 500) English courses; six of those credits may be taken in upper-level foreign literature in the original language or foreign literature in English translation (FLET). ENGL 101-200 (or equivalent) do not count toward the major.

English majors should distribute their course work as follows:

##### 1. ENGL 301 English studies modules (3 credits)

##### 2. Linguistics or writing (3 credits)

ENGL 302 Legal Writing  
 ENGL 304 Advanced Composition  
 ENGL 305 Creative Writing: Genres  
 ENGL 307/TEDU 307 Teaching Writing Skills  
 ENGL/MGMT 327 Business and Technical Report Writing  
 ENGL/THEA 426 Playwriting  
 ENGL 435 Advanced Poetry Writing  
 ENGL 437 Advanced Fiction Writing  
 ENGL/LING/ANTH 449 Introduction to Linguistics



ENGL/LING 450 Modern Grammar  
 ENGL/LING 451 History of the English Language  
 ENGL/LING/WMNS 452 Language and Gender  
 ENGL/LING 453 Introduction to Modern Rhetoric

### 3. Literature and criticism (21 credits)

To ensure that students study a range of national, historical and cultural literatures, among the 21 hours required, students must include six credits in literature prior to 1700, six credits in literature 1700-1900, six credits in British literature, three credits in American literature, and three credits in the literature of diversity. Please note that individual courses often fall into more than one of these categories, offering students additional flexibility.

ENGL 313 Southern Literature (AL)  
 ENGL/AFAM 314 African-American Literature (AL), (D)  
 ENGL 315 The Modern Novel  
 ENGL 316 Modern Poetry  
 ENGL 317 Modern Drama  
 ENGL 318 Contemporary Poetry  
 ENGL 320 18th Century British Literature (BL, 1700-1900)  
 ENGL 321 British Literature of the Romantic Era (BL, 1700-1900)  
 ENGL 322 Victorian Poetry (BL, 1700-1900)  
 ENGL 323 Early 20th Century British Literature (BL)  
 ENGL 335 Literature of the English Renaissance (BL, pre-1700)  
 ENGL 350 Approaches to Literature  
 ENGL/TEDU 351 Children's Literature I\*  
 ENGL/RELS 361 The Bible as Literature (pre-1700)  
 ENGL/AFAM 363 African Literature (D)  
 ENGL/AFAM 365 Caribbean Literature (D)  
 ENGL 367 Eastern Thought in Western Literature  
 ENGL 371 American Literature: Colonial and Federal (AL, 1700-1900)  
 ENGL 372 American Literature: American Romanticism (AL, 1700-1900)  
 ENGL 373 American Literature: Realism and Naturalism (AL, 1700-1900)  
 ENGL 374 American Literature: Early 20th Century (AL)  
 ENGL 375 American Literature: Contemporary (AL)  
 ENGL 381 Fiction into Film  
 ENGL/WMNS 384 Women Writers (D – other topic)  
 ENGL/ENVS 385 Nature Writing (AL)  
 ENGL/ANTH 386 Introduction to Folklore (D)  
 ENGL 391 Topics in Literature (by specific topic)  
 ENGL 400 Shakespeare: The Early Works (BL, pre-1700)  
 ENGL 401 Shakespeare: The Later Works (BL, pre-1700)  
 ENGL 402 Chaucer (BL, pre-1700)  
 ENGL 403 Milton (BL, pre-1700)  
 ENGL 407 Medieval Epic and Romance (pre-1700)  
 ENGL 409 Medieval Studies (pre-1700, other by topic)  
 ENGL 410 Renaissance Studies (pre-1700, other by topic)  
 ENGL 411 18th Century British Studies (BL, 1700-1900)  
 ENGL 414 American Novels and Narratives: 20th Century (AL)  
 ENGL 415 British Novel: 18th Century (BL, 1700-1900)  
 ENGL 416 British Novel: 19th Century (BL, 1700-1900)  
 ENGL 423 English Drama, 900-1642 (BL, pre-1700)

ENGL 424 Restoration and 18th Century Drama (BL, 1700-1900)  
 ENGL 429 Form and Theory of Poetry  
 ENGL 430 Form and Theory of Fiction  
 ENGL/TEDU 433 Literature for Adolescents\*  
 ENGL 491 Topics in Literature (by specific topic)  
 AMST 391 Topics in American Studies (AL)  
 AMST 394 Perspectives in American Studies (AL)

\* English majors may count either ENGL 351 or ENGL 433, but not both toward their major.

### 4. Electives (6 credits)

Any upper-level English, foreign literature, or foreign literature in translation (FLET) courses may be used as general electives.

### 5. At least three credits must be taken in courses designated each semester as senior seminars (S).

These are small classes in which students produce sustained writing projects.

## Collateral requirements

In addition to the ENGL courses required for the bachelor of arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) by course or placement.

## Minor requirements — general

English majors may minor in writing, but not in English.

**Minor in English.** The minor in English consists of 18 credits in upper-level (300-400) English courses, with at least 3 credits from each of the following areas: literature before 1700, literature between 1700 and 1900, linguistics or advanced writing, and the literature of diversity. Furthermore, students must select their courses so that at least one is a course in British literature and at least one is a course in American literature. Three credits may be taken in foreign literature in English translation and three in ENGL 492 Independent Study. ENGL 301 English Studies Module is not required for the minor, but is strongly recommended.

**Minor in writing.** The minor in writing requires 18 credits in the writing courses listed in this paragraph. ENGL 304 Advanced Composition, is required and should be taken as early as possible. The other 15 credits must be from creative writing (ENGL 305, 426, 427, 435, 436, 437 and 438); and/or from professional writing and rhetoric (ENGL 302, MGMT/ENGL 327,

ENGL/LING 453, ENGL 493 and MASC 203, 300, 305 and 341).

## Master of arts in English and master of fine arts in creative writing

For information about the graduate program in English, see the Graduate Bulletin.

## Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in English. A full description of this program appears in Part XX of this bulletin.

## Course in comparative literature (CMLI)

### CMLI 391/FLET 391 Topics in Comparative Literature.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits in all topics courses at the upper-level division. An in-depth study of selected topics in comparative literature. See the Schedule of Classes for specific topics to be offered each semester.

## Courses in English (ENGL)

### ENGL 001 Fundamentals of English Composition.

Semester course; 3 lecture hours. 0 credits. This course is recommended for students who have not previously studied grammar and composition extensively and will be required for those students whose English placement scores indicate inadequate preparation in grammar and composition. A course designed to prepare students for ENGL 101 Composition and Rhetoric by teaching them to write clear sentences and well-developed, well-organized paragraphs.

### ENGL 002 English as a Second Language.

Semester course; 2 laboratory and 2 lecture hours. 0 credits. Primarily for students whose English as a second language skills are at the intermediate level. Instruction in English pronunciation, grammar, vocabulary, and writing for students whose native language is not English.

### ENGL 101 Composition and Rhetoric I.

Semester course; 3 lecture hours. 3 credits. Introduction to effective writing and critical analysis.

### ENGL 114 English Grammar and Usage.

Semester course; 3 lecture hours. 2 credits. Prerequisite: ENGL 101 or permission of the director of composition and rhetoric. An intensive study of the fundamentals of English grammar, usage, punctuation, mechanics, and spelling through drills and written exercises. This course is not equivalent to ENGL 101 or 200, and these credits may not be used to satisfy the College of Humanities and Sciences degree requirement in composition and rhetoric.

**ENGL 200 Composition and Rhetoric II.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 101 and sophomore standing (completion of 24 credits). Principles and practices of critical reading, analysis, and writing; methods and criteria for finding and evaluating information from a variety of printed and electronic sources; appropriate ways to use and document outside evidence in academic writing.

**ENGL 101 is a prerequisite to all 200-level English courses; three credits in 200-level literature courses (or equivalent) are prerequisite to all 300- and 400-level English courses.**

**ENGL 201 Western World Literature I.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to the literature of Western cultures from the ancient world through the Renaissance, emphasizing connections among representative works.

**ENGL 202 Western World Literature II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to the literature of Western cultures from the end of the Renaissance to the present, emphasizing connections among representative works.

**ENGL 203 British Literature I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to the literature of the British Isles from the Middle Ages through the 18th century, emphasizing connections among representative works.

**ENGL 204 British Literature II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to the literature of the British Isles from the late 18th century to the present, emphasizing connections among representative works.

**ENGL 205 American Literature I.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to the literature of the United States from its origins through the 1860s, emphasizing connections among representative works.

**ENGL 206 American Literature II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to the literature of the United States from the 1860s to the present, emphasizing connections among the representative works.

**ENGL 211 Contemporary World Literature.**

Semester course; 3 lecture hours. 3 credits. A study of selected literature published in the last 25 years and chosen from a number of different nations and cultures.

**ENGL 215 Readings in Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to literature through the study of two or more types, such as poetry, fiction, drama or essay.

**ENGL 216 Readings in Narrative.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to literature with the focus on the art and structure of the narrative in a variety of forms.

**ENGL 236/WMNS 236 Women in Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to literature by and/or about women.

**ENGL 241 Shakespeare's Plays.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 101. An introduction to literature, with the focus on Shakespeare's plays, including their art and dramatic conventions.

**ENGL 291 Topics in Literature.**

Semester course; 3 lecture hours. 3 credits. Maximum six credits in all topics courses at the 200 level. Prerequisite: ENGL 101. An introduction to literature through the in-depth study of a selected topic or genre. See the Schedule of Classes for specific topics to be offered.

**ENGL 300 Practical Writing Workshop.**

Semester course; 3 workshop hours. 1-3 credits, 5, 10, or 15 weeks. Prerequisite: ENGL 101, 200 and three credits in 200-level literature courses (or equivalent). Practical Writing Workshop is a variable credit course covering organization, writing, and revision skills useful in upper-level university classes and on-the-job situations. Classes will be conducted as workshops, discussions, and lectures. Assignments may consist of essays, revision exercises, summaries, critical reviews, letters, and resumes. Does not satisfy the Humanities and Sciences minimum competency writing requirements or count toward requirements for the English major or minor.

**ENGL 301 English Studies Modules: \_\_\_\_\_.**

One-half semester course; 1.5 lecture hours. 1.5 credits per module. Students may not receive credit for 2 modules on same topic. Prerequisite: ENGL 101 and three credits in 200-level literature courses (or equivalent). A series of short courses which focus on skills helpful early in the English major, introducing students to the ways in which language is used in literary texts and including practice in shaping written responses to those texts. See the Schedule of Classes for module topics.

**ENGL 302 Legal Writing.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 200. Intensive practice in writing on subjects related to law or legal problems. Emphasis on organization, development, logical flow, and clarity of style. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 304 Advanced Composition.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 200. An advanced study of the writing of nonfiction prose, such as interviews, reviews and criticism, satire and humor, scientific and analytic writing. Techniques of rewriting and publishing will also be considered. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 305 Creative Writing: Genres.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 200. Sections: poetry, fiction, drama, or multigenre. A workshop primarily for students who have not produced a portfolio of finished creative work. Students will present a collection of their work at the end of each course. See the Schedule of Classes for specific genres to be offered each semester. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 307/TEDU 307 Teaching Writing Skills.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Studies the theory and methods for teaching writing to students in middle and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation, and topic construction. Includes extensive journal and essay writing. May not be used to satisfy the literature requirements of the College of Humanities and Sciences.

**ENGL 313 Southern Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the literature of the South with attention to writers such as Byrd, Poe, Chopin, Faulkner, Welty, Wolfe, O'Connor, Walker and Percy.

**ENGL 314/AFAM 314 African-American Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). An examination of the culture and literature of African-Americans from their roots in Africa and the African Diaspora to the present day. Authors may include Wheatley, Jacobs, Wilson, Brown, Dubois, Hurston, Wright, Gaines and Morrison.

**ENGL 315 The Modern Novel.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). An examination of the novel, chiefly British and European, in the 20th century.

**ENGL 316 Modern Poetry.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of British and American poetry in the first half of the 20th century.

**ENGL 317 Modern Drama.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the development of Continental, English and American drama since Ibsen.

**ENGL 318 Contemporary Poetry.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of British and American poetry from approximately 1950 to the present for the purpose of determining the aesthetic and thematic concerns of contemporary poets.

**ENGL 320 18th Century British Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A survey of representative poetry, drama and prose from the Restoration and 18th century, usually including Behn, Dryden, Pope, Swift, Johnson, and Gay.

**ENGL 321 British Literature of the Romantic Era.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Exploration of the literature and the cultural phenomenon of Romanticism in Britain during the years 1783-1832, with reading from poets such as Blake, Wordsworth, Byron, and Shelley, and from a variety of other writers.

**ENGL 322 Victorian Poetry.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A survey of the poetry of Victorian Britain, usually including Tennyson, the Brownings, Arnold, and the pre-Raphaelites.

**ENGL 323 Early 20th Century British Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Representative British and Irish poetry, fiction, and drama of the 20th century, including such writers as Yeats, Joyce, Shaw, Lawrence, Conrad, Auden, Forster and Woolf.

**ENGL 324 Later 20th Century British Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Representative British and Irish fiction, drama, and poetry of the later 20th century, including such writers as Thomas, Golding, Lessing, Beckett, Heaney, Larkin, Fowles, Churchill and Murdoch.

**ENGL 327/MGMT 327 Business and Technical Report Writing.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGL 200. Development of critical writing skills used in business, science, technology, and government, including instructions, descriptions, process explanations, reports, manuals, and proposals. The course will include such topics as communication theory, technical style, illustrations, formats for proposals, reports, and manuals. May not be used to satisfy the literature requirement of the College of Humanities and Sciences.

**ENGL 335 Literature of the English Renaissance.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). An introduction to some of the most exciting works of a dynamic age, providing an understanding not only of the achievements of Shakespeare, Spenser, and Milton, but also of the literary period from which they emerged.

**ENGL 350 Approaches to Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). The study and application of various critical approaches such as historical, sociocultural, psychological, archetypal, and formalist, used in analyzing literary works.

**ENGL 351/TEDU 351 Children's Literature I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Designed to give students an appreciation of children's literature; includes biography, fable, myth, traditional and modern fanciful tales, and poetry, as well as a survey of the history of children's literature. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

**ENGL 361/RELS 361 The Bible as Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Literary aspects of the Bible will be considered. Also, attention will be given to the history of the English Bible.

**ENGL 363/AFAM 363 African Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A survey of the literature of Africa with particular emphases on fiction and on West Africa. Some attention also will be given to orature.

**ENGL 365/AFAM 365 Caribbean Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A survey of West Indian writings. Attention will be given to African, European and Amerindian influences as well as to the emergence of a West Indian literary tradition.

**ENGL 367 Eastern Thought in Western Literature.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). An exploration of the influence of Eastern thought on selected Western writers, with emphasis on the period from the 19th century to the present.

**ENGL 371 American Literature: Colonial and Federal.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the most important writings from the founding of the first colonies to the establishment of the federal government with attention to such authors as Bradford, Byrd, Bradstreet, Taylor, Edwards and Franklin.

**ENGL 372 American Literature: American Romanticism.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the writings of the American romantics in the 19th century, with attention to such authors as Poe, Emerson, Thoreau, Fuller, Hawthorne, Melville, Dickinson and Whitman.

**ENGL 373 American Literature: Realism and Naturalism.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of writings from the end of the Civil War to World War I, with attention to such authors as Dickinson, Clemens, Howell, James, Wharton, Crane, Norris, Dreiser, Chopin and Chesnut.

**ENGL 374 American Literature: Early 20th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the most important writings between World War I and World War II, with attention to such authors as Anderson, Frost, Eliot, Stein, Glasgow, Fitzgerald, Wright, Cather, Hemingway, O'Neill, Hurston, Toomer and Faulkner.

**ENGL 375 American Literature: Contemporary.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of American writings since the end of World War II, with attention to such authors as Albee, Auster, Baldwin, Carver, Didion, Ellison, Ginsberg, Lowell, Morrison, Percy, Plath, Salinger and Walker.

**ENGL 381 Fiction into Film.**

Semester course; 2 lecture and 1 laboratory hour. 2 or 3 credits, 10 to 15 weeks (decided in advance). Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the translation of literature into film. Topical approaches vary from semester to semester. Consideration is given to the literature in its original form and to the methods of translating it into film.

**ENGL 384/WMNS 384 Women Writers.**

Semester course; 3 lecture hours. 3 credits. May be repeated once when different groups of writers are studied. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of selected literature written by women and about women writers.

**ENGL 385/ENVS 385 Nature Writing.**

3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the literary genre of nature writing in English.

**ENGL 386/ANTH 386 Introduction to Folklore.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A survey of the basic forms of folklore including proverbs, riddles, ballads, folktales, legends, myths and games. The survey will also include approaches to collecting material and examining its literary, social and historical significance.

**ENGL 390 Studies in Satire.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Studies in the satiric mode, with some attention to the definition and development of the mode.

**ENGL 391 Topics in Literature.**

Semester course; 3 lecture hours. 3 credits. Maximum twelve credits in all topic courses at the upper-level division. Prerequisites: Three credits in 200-level literature courses (or equivalent) and junior standing. An in-depth study of a literary genre, an aesthetic or cultural theme in literature, or of a major writer in English or American literature. See the Schedule of Classes for specific topic to be offered each semester.

**ENGL 400 Shakespeare: The Early Works.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Study of the plays and poems written before 1600, focusing primarily on the comedies and histories. For English majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

**ENGL 401 Shakespeare: The Later Works.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Study of the plays written in 1600 and after, focusing primarily on the mature tragedies and late romances. For English majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

**ENGL 402 Chaucer.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of "The Canterbury Tales" with some attention to the early works. For English majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

**ENGL 403 Milton.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of shorter poems, selected prose, "Paradise Lost," and "Samson Agonistes." For English majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

**ENGL 407 Medieval Epic and Romance.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the vernacular epic and romance in England and on the continent prior to 1500.

**ENGL 409 Medieval Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Studies in the English language and literature of the Middle Ages in its cultural context.

**ENGL 410 Renaissance Studies: \_\_\_\_\_.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Studies in the English language and literature of the 16th and 17th centuries.

**ENGL 411 18th Century British Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Studies in the literature, language and culture of the Restoration and 18th century England.

**ENGL 413 American Novels and Narratives: 19th Century and Earlier.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups of Americans.

**ENGL 414 American Novels and Narratives: 20th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of selected novels with some attention to other forms of narrative that reflect the experiences of diverse groups of Americans.

**ENGL 415 British Novel: 18th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the British novel in the 18th century, usually including Defoe, Richardson, Fielding, Burney, Sterne, Austen, Radcliffe and Walpole.

**ENGL 416 British Novel: 19th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the British novel, usually including Austen, Dickens, Thackeray, the Brontës, George, Eliot and Hardy.

**ENGL 423 English Drama, 900-1642.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the origin of the English drama and its development until the closing of the theaters in 1642, exclusive of Shakespeare.

**ENGL 424 Restoration and 18th Century Drama.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of English drama from 1660-1777, usually including the comedy of manners, sentimental comedy, ballad opera, farce, and heroic and bourgeois tragedy.

**ENGL 426/THEA 426 Advanced Playwriting.**

Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisites: Three credits in 200-level literature courses (or equivalent) and completion of ENGL 305 in drama with grade of "A" or "B," or permission of instructor. A study of the craft of playwriting, leading to the creation of scripts for the theatre. Works may be selected for reading and performance.

**ENGL 429 Form and Theory of Poetry.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the poetics, including prosody, with attention to the nature and functioning of language in poetry (especially metaphor), the development of poetic genres, and the process by which poems are created and come to have meaning.

**ENGL 430 Form and Theory of Fiction.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of narration in verbal and other media, with attention to the nature, organization, and functioning of language in narrative, the development of narrative genres, and the process by which narratives are created and come to have meaning.

**ENGL 433/TEDU 433 Literature for Adolescents.**

Prerequisite: Three credits in 200-level literature courses (or equivalent). Designed to acquaint the prospective middle and secondary school English teacher with the nature, scope, and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

**ENGL 435 Advanced Poetry Writing.**

Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisites: Three credits in 200-level literature courses (or equivalent) and completion of ENGL 305 in poetry with an "A" or "B," or permission of instructor. Study the craft of writing poetry, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of work and to become proficient in critical analysis in order to evaluate of their own poetry.

**ENGL 437 Advanced Fiction Writing.**

Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisites: Three credits in 200-level literature courses (or equivalent) and completion of ENGL 305 in fiction with an "A" or "B," or permission of instructor. Study of the craft of writing fiction, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of short stories or portion of a novel and to become proficient in the critical analysis of fiction in order to evaluate their own work.

**ENGL 439 Literary Nonfiction Writing.**

Semester course; 3 workshop hours. 3 credits; may be repeated once for credit. Prerequisite: ENGL 304 or ENGL 305, or permission of instructor. Advanced study of the craft of literary nonfiction writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of writing or a portion of a book-length work of nonfiction, and to become proficient in the critical analysis of literary nonfiction in order to evaluate and articulate the strength of their own work.

**ENGL 449/LING 449/ANTH 449 Introduction to Linguistics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For English majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

**ENGL 450/LING 450 Modern Grammar.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). Study of modern English grammar and usage with some attention to linguistic theory. Recommended for teachers at all levels. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For English majors, these courses (limit of six credits) may be counted as part of a graduate or undergraduate degree, but not both.

**ENGL 451/LING 451 History of the English Language.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). The historical development of the English language; etymology, morphology, orthography and semantics. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

**ENGL 452/LING 452/WMNS 452 Language and Gender.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power, and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

**ENGL 453/LING 453 Introduction to Modern Rhetoric.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). An introduction to the broad range of modern rhetorical theories, emphasizing their relationships with linguistics, literary criticism, and the process of writing. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

**ENGL 454/INTL 454/ANTH 450 Cross-Cultural Communication.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in 200-level literature courses (or equivalent). A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems.

**ENGL 491 Topics in Literature.**

Semester course; 3 lecture hours. 3 credits. Maximum twelve credits in all topics courses at the upper-division level. Prerequisite: Three credits in 200-level literature courses (or equivalent). An in-depth study of a selected literary topic or genre of one or two major writings in English or American literature. See the Schedule of Classes for specific topic to be offered each semester.

**ENGL 492 Independent Study.**

Semester course; variable credit. Maximum of three credits per semester. Student may take no more than nine hours total. Prerequisites: Three credits in 200-level literature courses (or equivalent). Generally open only to upper-class students with at least 12 hours of English. To register, the student must write a proposal and have it

approved by the supervising instructor, the director of undergraduate studies, and the department chairperson. It may not be used for a writing project. This course is designed for students who wish to do extensive reading and writing in a subject not duplicated by any English course in this bulletin.

**ENGL 493 English Internship.**

Semester course; 1-3 credits per semester, maximum total of six credits. Prerequisites: Three credits in 200-level literature courses (or equivalent). Open to students with demonstrated writing ability; completion of ENGL 302, 304, or 327 is recommended. Permission and determination of credit must be established prior to registration. Students will apply research, writing, and/or editing skills in an approved job in areas such as business, government, law or financial services.

**ENGL 552/TEDU 552 Teaching English as a Second Language.**

Semester course; 3 lecture hours. 3 credits. Provides students who plan to teach English to people whose native language is not English with a variety of instructional/learning strategies. Presents and explores current approaches and methodology, as these relate to linguistic features and pedagogy.

**Courses in linguistics (LING)****LING 103/LASK 103 Introduction to Languages.**

Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological, and historical aspects of languages. (Completion of this course does not qualify a student to enroll in the 200 level of a language without passing a language placement test.)

**LING 401/SPAN 401 Comparative Structures.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent. Conducted in Spanish. A comparison of English and Spanish, with emphasis on pronunciation and problems encountered in the teaching of Spanish.

**LING 449/ENGL 449/ANTH 449 Introduction to Linguistics.**

Semester course; 3 lecture hours. 3 credits. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. May not be used to satisfy the College of Humanities and Sciences requirement in English. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

**LING 450/ENGL 450 Modern Grammar.**

Semester course; 3 lecture hours. 3 credits. Study of modern English grammar and usage with some attention to linguistic theory. Recommended for teachers at all levels. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

**LING 451/ENGL 451 History of the English Language.**

Semester course; 3 lecture hours. 3 credits. The historical development of the English language; etymology, morphology, orthography, and semantics. May not be used to satisfy the College of Humanities and Sciences requirement in English. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

**LING 452/WMNS 452/ENGL 452 Language and Gender.**

Semester course; 3 lecture hours. 3 credits. A study of relationships between gender and language by focusing on such issues as differences between the ways women and men use language, relationships between language and power, and ways in which language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the College of Humanities and Sciences requirement in literature. For English majors, these courses (limit of six credits) may be counted as part of graduate or undergraduate degree, but not both.

**LING 453/ENGL 453 Introduction to Modern Rhetoric.**

Semester course; 3 lecture hours. 3 credits. An introduction to the broad range of modern rhetorical theories, emphasizing their relationships and linguistics, literary criticism, and the process of writing. May not be used to satisfy the College of Humanities and Sciences requirement in English.

**LING 552/TEDU 552 Teaching English as a Second Language.**

Semester course; 3 lecture hours. 3 credits. Provides students who plan to teach English to people whose native language is not English with techniques used in teaching foreign languages. Contrastive analysis of morphology, phonology and syntax are used to isolate areas of difficulty in learning English.

**Courses in language skills (LASK)****LASK 103/LING 103 Introduction to Languages.**

Semester course; 3 lecture hours. 3 credits. A course designed to help students understand how languages function through a survey and contrastive analysis of language systems, with attention to the sociocultural, psychological, and historical aspects of languages. (Completion of this course does not qualify a student to take the 200 level of a language without passing a language placement test.)

**LASK 203 Classical Elements in the English Language.**

Semester course; 3 lecture hours. 3 credits. Development of English vocabulary through a study of Greek and Latin elements in English: derivatives, roots, and loan words. Some emphasis on the special vocabularies of the sciences.

**Minor and certificate in environmental studies****Andrew D. Lacatell**

Assistant Director, Center for Environmental Studies (1993)

B.A. 1993 University of Richmond

M.S. 1995 Virginia Commonwealth University

M.P.H. 1997 Medical College of Virginia, Virginia Commonwealth University

Environmental crises and discussion of environmental issues are central features of modern industrial societies. Continuing technological advancement and economic growth demand increased public understanding of environmental constraints and the effects of human activity on the environment. When environmental questions are explored in depth, scientific knowledge, policy considerations, and ethical questions are necessarily joined. The curriculum in environmental studies is structured to provide a multidisciplinary introduction to biophysical and social factors which affect the quality of life on earth.

### Minor in environmental studies

The minor in environmental studies provides an overview of the field which offers an intrinsically interesting way for many students to organize elective course work while gaining knowledge important to life in the contemporary world. This program is structured to provide a multidisciplinary introduction to biophysical and social factors that affect the quality of life, through the study of the scientific knowledge, policy considerations and the ethical issues that constitute environmental issues. When combined with the appropriate major, an environmental studies minor can be useful to students planning careers in any area concerned with environmental processes and problems. The minor also may prepare students for study at the graduate level in such concentrations as ecology and environmental systems.

**The minor in environmental studies consists of 24 credits.** Required courses are listed. Electives to complete the minor may be selected from ENVS-listed courses and from courses in related departments. Consult the environmental studies program coordinator or adviser for course approvals. At least one course must be taken from the natural sciences and one course from the social sciences. Of the 24 credits, 18 must be outside the student's major department. Twelve credits must be at the 300 level or higher.

Required courses for minor	Credits
URSP/ENVS 331 Environmental Systems	3
ENVS/POLI 311 Politics of the Environment	3
ECON 325 Environmental Economics	3

ENVS 490 Research Seminar in Environmental Studies	3
STAT 210 Basic Practice of Statistics or MGMT 301 Business Statistics	3
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### Post-baccalaureate certificate in environmental studies

The environmental studies certificate is for students who already hold a bachelor's degree in another field and wish to pursue studies in the environmental field. The certificate can help prepare students for work in such fields as industrial pollution control, municipal water treatment, environmental planning and analysis, biological monitoring, and science writing and reporting.

The **post-baccalaureate certificate in environmental studies** requires 36 credits, which includes four environmental courses and two statistics courses. Electives to complete the certificate may be selected from the ENVS-listed courses and from courses in related departments. Consult the environmental studies program coordinator or adviser for course approvals. At least one course must be taken from the natural sciences, and one from the social sciences. Of the 36 credits, 24 credits must be at the 300 level or above. A maximum of 11 of the environmental studies-related credits and all six of the statistics credits may be transferred from course work completed before or after receiving the bachelor's degree. At least 18 approved credits must be taken at VCU.

**Post-baccalaureate certificate students must apply for admission using an undergraduate admission form.** Normally, a GPA of 2.7 or better is required for admission. Please contact the Center for Environmental Studies for the most current curriculum guidelines.

Required courses for certificate	Credits
URSP/ENVS 331 Environmental Systems or URSP/ENVS/GEOG 332 Environmental Management	3
ENVS/POLI 311 Politics of the Environment	3
ECON 325 Environmental Economics	3
ENVS 490 Research Seminar in Environmental Studies	3
STAT 210 Basic Practice of Statistics or MGMT 301 Business Statistics	3
Three additional credits in statistics above STAT 210 (Students may not receive credit for both STAT 210 and MGMT 301.)	3
	18

### Additional recommended courses

BIOL 151, 152 Introduction to Biological Sciences and 151L, 152L Introduction to Biological Sciences Laboratory  
CHEM 101-102 General Chemistry and 101L, 102L General Chemistry Laboratory

### Environmental concentration in bachelor of science in science

An environmental science concentration is available in the bachelor of science in science program. Contact the Center for Environmental Studies for more information.

### Courses in environmental studies (ENVS)

#### ENVS 103/BIOL 103 Environmental Science.

Semester course; 3 lecture and 1 recitation hour. 4 credits. Not applicable for credit towards the B.S. in Biology. Not applicable as a prerequisite for any biology course at the 200 level or above. Basic scientific principles of environmental processes. Draws together aspects of biology, chemistry, geology, physics, and sociology. Among the topics covered are ecology, natural resources, air and water resources, energy and recycling, population biology and sustainable global societies.

#### ENVS 103L/BIOL 103L Environmental Science Laboratory.

Semester course; 2 hours. 1 credit. Pre or corequisite: ENVS/BIOL 103. Intended for criminal justice, English, history, mass communications, philosophy, religious studies, political science, psychology, sociology, anthropology, urban studies, foreign language majors, and programs in other schools requiring science courses. Not intended for criminal justice, English, history, mass communications, philosophy, religious studies, political science, psychology, sociology, anthropology, URBAN STUDIES, foreign language majors, and programs in other schools requiring science courses. Not intended for other College of Humanities and Sciences majors. Laboratory exercises correlated with ENVS/BIOL 103.

#### ENVS 105/GEOG 105 Physical Geology.

Semester course; 3 lecture hours. 3 credits. A descriptive approach to physical geology dealing with the history and structure of the earth, catastrophic events, and geology as it relates to the contemporary environment. An optional laboratory may be taken with this course. See PHYS/ENVS 105L.

#### ENVS 105L/GEOG 105L Physical Geology Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: GEOG 105/ENVS 105. An optional laboratory course consisting of experiments and activities related to GEOG105/ENVS 105.

#### ENVS 311/POLI 311 Politics of the Environment.

Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crises it centers on. Special attention will be given to the constitutional, political, and geographical factors in the development of environmental policy and the

organized effort to deal with governmental actions and inaction and its impact on policy outcomes.

#### **ENVS 314/BIOL 315 Man and Environment.**

3 lecture hours. 3 credits. Not applicable to the biology major. A comparative study of the ecology and natural history of human populations, including the environment as determining factors in the evolution of human institutions and technology, resources management, and population control; basic theory of population crises; cultural traditions as mechanisms of population control; basic theory of population biology.

#### **ENVS 315/PHYS 315 Energy and the Environment.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior or senior standing. Open to non-physics majors; not applicable to the physics majors. A study of society's demand for energy, how it is currently being met, the environmental consequences thereof, and some discussion of alternatives.

#### **ENVS 330/BIOL 332 Environmental Pollution.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Eight credits in biology. Not applicable to the biology major. The study of pollution in the environment with emphasis on the procedures for detection and abatement.

#### **ENVS 331/URSP 331 Environmental Systems.**

Semester courses; 3 lecture hours. 3 credits. Consists of a broad overview of relevant physical science subjects: climatology, soils science, plant ecology, hydrology, geology, and geomorphology. These subjects are viewed together in a systems framework for taking into account the many interactions among environmental systems and between these systems and man.

#### **ENVS 332/URSP 332/GEOG 332 Environmental Management.**

Semester course; 3 lecture hours. 3 credits. Provides a framework for the development of environmental management objectives and techniques. The focus of the course is on a study of natural hazards in Virginia and a variety of approaches to reducing losses from these hazards.

#### **ENVS 335/GEOG 335 Environmental Geology.**

Semester course; 3 lecture hours. 3 credits. Corequisite: ENVS/GEOG 335L. The relationship between humankind and the physical environment, Earth materials and processes, geological hazards, water, mineral and energy resources, land use, and environmental health and law.

#### **ENVS 335L/GEOG 335L Environmental Geology Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: ENVS/GEOG 335. Required for ENVS majors enrolled in ENVS/GEOG 335; optional for other majors. Attendance on one Saturday morning field trip required. Laboratory exercises coordinated with ENVS/GEOG 335 lectures.

#### **ENVS 401/GEOG 401 Meteorology and Climatology.**

Semester course; 3 lecture hours. Prerequisite: GEOG 203 or a physical science sequence or permission of instructor. A basic, semiquantitative course in the elements of weather and climate, their driving forces, and their spatial and

temporal distribution and variability. Atmospheric motions and circulation, weather forecasting, human impact on weather, and climate.

#### **ENVS 401L/GEOG 401L Meteorology and Climatology Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: GEOG/ENVS 401. A series of laboratory and field experiments designed to quantify the elements of weather and climate and to interpret their local temporal and spatial variations.

#### **ENVS 411/GEOG 411 Oceanography.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG 203 or PHYS 101 or a natural science sequence or permission of instructor. Designed for earth science teachers. A basic course in the physical, chemical, and geological properties of oceans and ocean basins. Origin and character of ocean basins, properties of oceanic waters, oceanic circulation, land-sea interactions, marine environments, and ecology.

#### **ENVS 490 Research Seminar in Environmental Studies.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Senior standing and at least 12 hours of approved environmental studies course work. An interdisciplinary examination of problems and issues central to environmental studies. Environmental research of VCU faculty will be reviewed, and selected local environmental problems will be studied. Each student will complete a research project focusing on a specific environmental question.

#### **ENVS 491 Topics in Environmental Studies.**

Semester course; variable; 1-3 credits per semester. May be repeated with different topics for a maximum of six credits. Prerequisites vary by topic. An in-depth study of a selected environmental topic. See the Schedule of Classes for specific topic(s) and prerequisites.

#### **ENVS 492 Independent Study.**

Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all topics courses. Open generally to juniors or seniors who have declared environmental studies as a minor. Determination of the amount of credit and permission of instructor must be procured prior to registration for the course.

#### **ENVS 493 Environmental Studies Internship.**

Semester course; variable; 1-3 credits per semester. Maximum total of six credits. Open to students of senior standing who have had some background in environmental studies. Students receive credit for work on environmental projects with approved agencies. Participation requires the approval of both a faculty member and an agency. Graded as pass/fail.

### **Department of Foreign Languages**

#### **Margaret T. Peischl**

Associate Professor and Department Chair (1981)  
B.A. 1955 Pennsylvania State University  
M.A. 1974 and Ph.D. 1981 University of Southern California

Brown, R. McKenna (1995) Associate Professor and Program Director, International and Area Studies  
B.A. 1977 Florida A & M University  
M.A. 1985 and Ph.D. 1991 Tulane University  
Dvorak, Paul F. (1974) Professor  
B.A. 1968 La Salle College  
M.A. 1970 and Ph.D. 1973 University of Maryland  
Godwin-Jones, Robert A. (1979) Professor  
B.A. 1971 Franklin and Marshall College  
M.A. 1973 and Ph.D. 1977 University of Illinois, Urbana-Champaign  
Kirkpatrick, Peter S. (1992) Associate Professor  
B.A. 1986 University of Richmond  
M.A. 1988 and Ph.D. 1992 University of Virginia  
Maréchal, Chantal Anne-Marie (1991) Associate Professor  
Licence es Lettres 1969 Matrise es Lettres, Sorbonne, Paris  
M.A. 1977 State University of New York  
Ph.D. 1983 University of Michigan  
Masullo, Antonio (1978) Assistant Professor  
J.D. 1954 University of Naples  
Moore, Sonja O. (1994) Assistant Professor  
B.A. 1980 University of Leeds, England  
M.A. 1984 Pennsylvania State University  
Muñoz, Eugenia (1990) Associate Professor  
B.A. 1966 Universidad de Valle  
M.A. 1981 Syracuse University  
Ph.D. 1990 University of Virginia  
Murphy-Judy, Kathryn A. (1994) Associate Professor  
B.A. 1972 and M.A. 1975 Colorado State University  
Ph.D. 1986 University of Minnesota  
Mustafa, Nancy C. (1986) Instructor  
A.A. 1959, A.B. 1961 and M.A. 1964 George Washington University  
Navarro, Consuelo (1997) Assistant Professor  
B.A. 1983 Central University of Ecuador  
M.A. 1989 University of Tennessee  
Ph.D. 1997 University of Minnesota  
Overvold, Angelina E. (1991) Assistant Professor  
B.A. 1971 St. Olaf College  
M.A. 1975 University of Michigan  
Ph.D. 1996 Brown University  
Sims, Robert L. (1976) Professor  
B.A. 1966 University of Michigan;  
M.A. 1968 and Ph.D. 1973 University of Wisconsin  
Sites, Linda Q. (1988) Instructor  
B.A. 1986 Mary Baldwin College  
M.A. 1988 University of Virginia  
Stackhouse, Kenneth A. (1971) Associate Professor  
B.A. 1966 Drew University  
M.A. 1968 and Ph.D. 1972 University of Florida  
White, Ann S. (1997) Assistant Professor  
B.A. 1983 Williamette University  
M.A. 1986 and Ph.D. 1988 University of Pittsburgh

#### **Emeriti faculty**

Beck, William J. Professor Emeritus  
B.S. Rutgers University  
M.A. Middlebury Language School  
Ph.D. Institut Catholique, Paris, France

Along with a broad-based liberal education in the humanities, the bachelor

of arts in foreign languages prepares students for careers requiring a knowledge of a foreign language, and the various sociocultural environments of its speakers; for graduate study in diverse fields; and for teaching French, German or Spanish.

The department offers the bachelor of arts in foreign languages, with tracks in French, Spanish, German and comparative literature.

The Department of Foreign Languages also offers courses in foreign literature in English translation and European culture. These courses do not satisfy general education language requirements or foreign language major requirements.

All VCU students wishing to continue their high school language must take the Foreign Language Placement Test. While credit is not granted by the test, appropriate levels of placement may fulfill certain graduation requirements. Students, once placed into a level, may not take courses on a lower level for credit. Transfer students will receive the credits granted by the institution from which they transfer. Consult specific language requirements for the bachelor of arts or bachelor of science degrees.

Foreign language majors interested in teaching early, middle, secondary, or special education can enroll in an Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in one of the foreign languages mentioned above and a master's in teaching. For additional information about this program administered jointly by the College of Humanities and Sciences and the School of Education, contact the School of Education's Office of Academic Services.

Language majors are strongly encouraged to take two more years in a second foreign language. The department offers minors in French, German and Spanish, and courses in Arabic, Chinese, Italian, Latin, Portuguese, Swahili, Hindi and Russian. The Department of Foreign Languages also offers courses in the Latin American studies minor and the Russian area studies minor.

### Study abroad opportunities

Majors or minors in the Department of Foreign Languages are encouraged to participate in a study-abroad program.

Programs for students interested in living and studying abroad during the summer offer students opportunities for short-term immersion in the language, culture, and civilization of the countries they visit. Currently, study-abroad programs through VCU are available to France, Guatemala, Canada, Austria, Spain, Germany and Italy. VCU is a member of the International Student Exchange Program (ISEP) which offers a junior year abroad at one of 40 universities worldwide.

### Minimum major and minor requirements for transfer students

Transfer students planning to major in a foreign language must complete a minimum of two 400-level courses within the department. Credit and distribution requirements must be satisfied by all students.

For the minor, course work must include at least two courses at the 300 level or above in the chosen language area.

### Degree requirements

**Bachelor of arts in foreign languages with a track in French, German or Spanish.** The degree program requires a minimum of 120 credits, with at least 30 of those credits in upper-level courses in French or German, and 31 credits in Spanish. Along with the general requirements for the B.A. degree, foreign language students in Spanish must take the 295 gateway course (exemptions from the 295 course are made on a case by case basis) and these courses from the corresponding track:

- 300 and 301 Advanced Grammar and Writing  
(Previously listed as Survey of Literature)
- 305 Conversation (or 311 in German)
- 320 and 321 Civilization (Previously listed as Literature of Spanish America in Spanish)
- 330 and 331 Survey of Literature
- 495 Spanish Portfolio Seminar (1 credit; Spanish only)

To complete the major, students select nine hours of course work at the 400 level.

**Transfer students** who intend to major in a foreign language must take a minimum of two 400-level courses at VCU in the chosen language area. Both credit and distribution requirements for the major must be satisfied.

Foreign language minors must take at least two 300- or 400-level courses at VCU in the chosen language area.

**Bachelor of arts in foreign language with a track in comparative literature.** The foreign languages degree program with a track in comparative literature requires a minimum of 120 credits, with at least 30 of those credits toward the major in upper-level (300-400) courses.

Along with the general education requirements of the College of Humanities and Sciences for the bachelor of arts degree and the undergraduate requirements, students in the comparative literature track must take CMLI 301 Introduction to Comparative Literature and CMLI 485 Seminar in Comparative Literature — core courses for the track. Students may substitute ENGL 350 Approaches to Literature for CMLI 301 with the permission of the comparative literature adviser.

Students in this program also must take at least 12 upper-level credits in one of the following international literatures: French, German, Spanish/Latin American. These credits must include the appropriate 330, 331 Survey of Literature sequence, and two other literature courses in the original language.

Students also must take at least six upper-level courses in a second national literature — American, Chinese, English, French, German, Greek or Spanish. Courses to satisfy this requirement can be taken in the original language or in English translation (FLET).

Finally, the student in this track of the program must take at least six upper-level courses in comparative literature, to include more than one national literature. The following courses may be used to fulfill this requirement:

### Comparative literature

CMLI/FLET 391 Topics in Foreign Literature in English Translation

### English

- ENGL 315 The Modern Novel
- ENGL 363AFAM 363 African Literature
- ENGL 365/AFAM 365 Caribbean Literature
- ENGL 367 Eastern Thought in Western Literature
- ENGL 386/ANTH 386 Introduction to Folklore
- ENGL 391 Topics in Literature
- ENGL 407 Medieval Epic and Romance
- ENGL/CMLI 421, 422 Comparative Literature

### Theatre

- THEA 403, 404 History of Dramatic Literature
- THEA 423, 424 Modern Drama



The following courses may be used to fulfill the requirements only with the permission of the comparative literature adviser:

#### English

ENGL 316 Modern Poetry  
ENGL 317 Modern Drama  
ENGL 318 Contemporary Poetry  
ENGL 361/RELS 361 The Bible as Literature  
ENGL 381 Fiction into Film  
ENGL 390 Studies in Satire  
ENGL 391 Topics in Literature  
ENGL 407 Medieval Epic and Romance  
ENGL 491 Topics in Literature  
ENGL 492 Independent Study

#### Foreign literature in English translation

FLET 311 The Humanist Quest in French Literature  
FLET 312 Revolt and Renewal in Modern French Literature  
FLET 391 Topics in Foreign Literature in English Translation  
FLET 492 Independent Study

#### Minor in French, German or Spanish

A minor in French, German or Spanish requires at least 18 credits in the chosen language, none of which may be earned at the 100 level. Only six credits may be earned by completing 201, 202 or 205. At least 12 credits must be taken at the 300 level or above. Note: Language Placement Test results cannot substitute for completion of course work.

#### Courses in European cultures (EUCU)

##### EUCU 307 Aspects of German Culture.

Semester course; 3 lecture hours. 3 credits. A broad interdisciplinary approach to an understanding of German culture, language, and literature. Lectures in English by guest speakers and/or use of films as required. This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.

##### EUCU 311 Classical Mythology.

Semester course; 3 lecture hours. 3 credits. The basic myths of the Greek and Roman heritage. Their impact in culture then and now; from the origins of Greek myth to the superstitions of the late Roman and early Christian world.

##### EUCU 345/INTL 345/URSP 350 Culture and Urbanism in Great Cities of the World.

Semester course; 3 lecture hours. 3 credits. Course may be repeated under different topics for a total of six credits. Prerequisite: Sophomore standing or permission of instructor. An interdisciplinary course with a dual focus on the origin, expansion, and significance of an important European city and on reflections of urbanism in its culture. Particular

emphasis will be placed on relating the physical, social and economic aspects of the city's growth and development to the cultural dimensions of urbanism, especially as the latter are manifested in major works of literature.

#### Courses in foreign languages (FRLG)

##### FRLG 101-102 Foreign Languages: \_\_\_\_\_.

Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading and oral skills. Course may be repeated with different languages.

##### FRLG 201 Foreign Languages: \_\_\_\_\_.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FRLG 102 or equivalent. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills. Course may be repeated with different languages.

##### FRLG 202 Foreign Languages: \_\_\_\_\_.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FRLG 201 or equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts. Course may be repeated with different languages.

##### FRLG 203/INTL 203 Language and Identity.

Semester course; 4 lecture hours. 4 credits. Taught in English. This course introduces students to both the cohesive and divisive dynamics that language exerts in the world today. Students explore the links connecting different peoples who share a common language as well as their language conflicts in a multilingual world. Students examine the interaction of language with identity in culture, art, and nationalism through fiction and non-fiction texts, films and multimedia pertaining to a specific language area, such as: The Francophone World, post-Franco Spain, post-Cold War Germany, the Mayan World, or the Swahili World. See the Schedule of Classes for areas being offered in a particular semester.

##### FRLG 204/INTL 204 Language and Groups in the United States.

Semester course; 4 lecture hours. 4 credits. Taught in English. This course introduces students to the sociocultural experience and formation of identity of non-English-speaking peoples in the United States. Students explore the dynamic between English and a specific heritage language and its interaction with artistic, cultural, and social issues through fiction and non-fiction texts, films, and multimedia pertaining to specific language group, such as: Latinos, Italian Americans, German Americans or Native Americans. See the Schedule of Classes for areas being offered in a particular semester.

##### FRLG 490 Foreign Languages Urban Internship.

Semester course; 50 to 150 clock hours in local, national or international urban internship placement where the use of a foreign language is required. 1-3 credits. Prerequisites: Prior completion of nine credits in a foreign language at the 300 level, with a course in advanced grammar and composition, one in conversation and one in civilization. Under the supervision of both a faculty member and a field supervisor, students will apply their linguistic skills in an approved work situation

and each internship will be specifically designed in accordance with the student's linguistic level and the job requirements. Students studying languages in which the 300-level courses are not available will be handled on a case by case basis in the screening process. All students will be screened before acceptance. Students wishing to undertake a non-urban project will register for an independent study.

#### Courses in foreign literature in English translation (FLET)

##### FLET 311 The Humanist Quest in French Literature.

Semester course; 3 lecture hours. 3 credits. A study of the developing concept of humanism in French literature from the Middle Ages to the end of the 18th century. (This course will not satisfy foreign language requirements. No knowledge of French is required. All work is done in English.)

##### FLET 312 Revolt and Renewal in Modern French Literature.

Semester course; 3 lecture hours. 3 credits. A study of the twin themes of revolt and renewal in French literature of the 19th and 20th centuries. (This course will not satisfy foreign language requirements. No knowledge of French is required. All work is done in English.)

##### FLET 321 Early German Literature.

Semester course; 3 lecture hours. 3 credits. Changing perspectives in German literature from its pagan beginnings, through the Medieval Golden Age, Baroque extremism, the Enlightenment, and Storm and Stress up to Classicism and Goethe's Faust. Treatment of The Nibelungenlied, the courtly epic, Simplicissimus, and selections by Lessing, Schiller, and Goethe. (This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.)

##### FLET 322 Modern German Literature.

Semester course; 3 lecture hours. 3 credits. Growing psychological awareness and alienation of the individual in German literature of the 19th and 20th centuries. Representative works chosen from among writers of the past century and such modern writers as Thomas Mann, Kafka, Hesse, Brecht, Kafka, Hesse, Brecht, Boll and Grass. (This course will not satisfy foreign language requirements. No knowledge of German is required. All work is done in English.)

##### FLET 391 Topics in Foreign Literature in English Translation.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of 12 credits. An in-depth study of selected topics in foreign literature. (This course will not satisfy foreign language requirements. No knowledge of a foreign language is required. All work is done in English.)

##### FLET 492 Independent Study.

Semester course; 1, 2, or 3 credits. Maximum of three credits per semester, maximum total of all FLT independent study courses is six credits. Open generally only to

students of junior or senior standing who have acquired at least 12 hours in any literature courses. Determination of course content and permission of the instructor and department chair must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest and for which they have the necessary background.

## Courses in Chinese (CHIN)

### CHIN 101-102 Elementary Chinese.

Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

### CHIN 201-202 Intermediate Chinese.

Continuous course; 3 lecture hours. 3-3 credits. Rapid review of the essentials of grammar, conversation, and readings from Chinese literature.

## Courses in French (FREN)

### FREN 101-102 Elementary French.

Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading and oral drill.

### FREN 110 Intensive French I.

Semester course; 10 lecture and lab hours. 8 credits. This intensive course combines FREN 101 and 102 into a single semester.

### FREN 201 Intermediate French.

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

**In order to complete French through the intermediate level, a student may select FREN 202 or 205.**

### FREN 202 Intermediate French Readings.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts. In order to complete French through the intermediate level, a student may select FREN 202 or 205.

### FREN 205 Intermediate Conversation.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation. In order to complete French through the intermediate level, a student may select FREN 202 or 205.

### FREN 210 Intensive French II.

Semester course; 6 lecture and lab hours per week. 6 credits. Prerequisite: Successful completion of FREN 101 and 102 or FREN 110. This intensive course combines FREN 201 and 202/205 into a single semester.

**Non-foreign language majors who wish to take one or two upper-level classes only need to complete FREN 202, 205 or equivalent.**

### FREN 295 Gateway to the French Major/Minor.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 201 or permission of instructor. This course is composed of three different areas: 1) writing and analytical skills: enhancement of grammatical and writing skills and development of analytical techniques using a variety of texts; 2) improving students' oral communication; 3) listening skills: extensive use of recorded material and Language Learning Center resources to improve and enhance listening skills in a variety of authentic contexts. Non-foreign language majors who wish to take one or two upper-level classes only need to complete FREN 202, 205, or equivalent.

### FREN 300, 301 Advanced Grammar and Writing.

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. A systematic review of French grammar with emphasis on the elements of style and vocabulary building; translation and composition.

### FREN 305 Advanced Conversation.

Semester course; 3 lecture hours. 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. Development of advanced oral skills while conversing about topics on current French culture and society. Proficiency in listening comprehension is stressed through regular activities based on a variety of different situations of communication.

### FREN 320 French Civilization and Culture I.

Semester course; 3 lecture hours. 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. A survey of French civilization and culture from its origins to the French Revolution. Introduction to and analysis of the most important aspects of Gallo-Roman society and of the Merovingian, Carolingian, and Capetian dynasties which influenced the institutions of the Ancien Régime and still serve as cultural archetypes and icons in contemporary French culture.

### FREN 321 French Civilization and Culture II.

Semester course; 3 lecture hours. 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. A survey of French civilization and culture from the Napoleonic era to the present. This course retraces important cultural and social traditions found during the first Empire, the Restoration, the Second Republic, the Second Empire, the Commune, the Third and Fourth Republics which influenced and continue to shape contemporary French civilization and culture of the Fifth Republic.

### FREN 330, 331 Survey of Literature.

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: French through the intermediate level or the equivalent. Conducted in French. First semester: through the 18th century. Second semester: 19th and 20th centuries.

### FREN 410 Explication de Textes.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Two French courses at the 300 level or permission of instructor. Conducted in French. This course provides an introduction to terms encountered in text analysis: prosody, versification, rhetorical language, narratology and genres. It presents traditional and current schools of literary criticism and applies them to an interdisciplinary selection of texts.

### FREN 420 French Regional Culture.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 320 or 321 or permission of instructor. Conducted in French. Focuses on the culture and civilization specific to each of France's 22 regions. Regional history, culture, architecture as well as sociopolitical, linguistic identities, artisanal trades and folklore are presented for each region.

### FREN 421 French Contemporary Culture.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 320 or 321 or permission of instructor. Conducted in French. Focuses on the contemporary culture found in French society today. The individuals and events shaping current French social, political, artistic and cultural life are examined. Each theme is illustrated by current audio-visual materials.

### FREN 422 French Cinema.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 320 or 321 or permission of instructor. Conducted in French. Tracing French cinema from les Frères Lumière and Georges Méliès through the New Wave to new contemporary directors, this course focuses on the thematic selections and stylistic techniques particular to French cinematographic culture. The class is offered concurrently with the Annual VCU French Film Festival, thereby permitting students to directly communicate with French actors and directors participating in the festival.

### FREN 425 French Media.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 305 or permission of instructor. Conducted in French. Analysis of the French media: written press, radio, and television. Advanced comprehension skills required and stressed through regular exercises pertaining to different journalistic discourses and styles. Proficiency in journalistic writing is developed in class through the creation of an electronic French newspaper on the Internet.

### FREN 430 The Middle Ages.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Chansons de geste, Littérature Courtoise, Fabliaux and Poésie lyrique.

### FREN 431 The 16th Century.

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of works representative of literary schools, genres, and major works of the period: Rabelais, the Pléiade, Minting and the Baroque poets.

**FREN 432 The 17th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Baroque and Classical readings including prose, poetry, and drama of the authors of the reign of Louis XIV; Pascal, La Rochefoucauld, La Bruyère, Corneille, Racine and Molière.

**FREN 433 The 18th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: the "philosophes" including Montesquieu, Voltaire, Diderot, and Rousseau, and readings from Marivaux, Prevost and Vauvenargues.

**FREN 434 The 19th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Romanticism, Realism, Naturalism, and Symbolism.

**FREN 435 The 20th Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FREN 300 or 301 or permission of instructor. Conducted in French. A contextualization and detailed study of a selection of texts representative of literary schools, genres, and major works of the period: Surrealism, Existentialism, Nouveau Roman, and Theater of the Absurd.

**FREN 440 Commercial French.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: At least one French course at the 300 level. This course introduces students to the cultural, economic, and linguistic dimensions of the Francophone commercial sector. It builds the student's reading, writing, listening, and speaking proficiencies through active engagement with business-related materials and activities.

**FREN 491 Topics in French.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth study of selected topics in French. See the Schedule of Classes for specific topic to be offered each semester.

**FREN 492 Independent Study.**

Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in French. Open generally only to students of junior or senior standing who have six credits of upper-level French courses and/or have a demonstrated competency in the language. Determination of course content and permission of the instructor must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

**Courses in German (GRMN)****GRMN 101-102 Elementary German.**

Continuous courses; 5 lecture/ recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

**GRMN 201 Intermediate German.**

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

**GRMN 202 Intermediate German Readings.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201 or the equivalent. Designed to increase the student's proficiency in German through the study of selected cultural and literary texts. In order to complete German through the intermediate level, a student may elect GRMN 202, 205 or equivalent.

**GRMN 205 Intermediate Conversation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation. In order to complete German through the intermediate level, a student may elect GRMN 202, 205 or equivalent.

**Non-foreign language majors who wish to take one or two upper-level classes only need to complete GRMN 202, 205 or equivalent.****GRMN 295 Gateway to German Major/Minor.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GRMN 201 or permission of instructor. This course focuses on three different areas: 1) writing and analytical skills: enhancement of grammatical and writing skills and development of analytical techniques using a variety of literary and expository texts; 2) phonetics: use and practice of native pronunciation; 3) listening skills: extensive use of recorded materials and Language Learning Center resources for the improvement of listening proficiency in a variety of authentic contexts. Non-foreign language majors who wish to take one or two upper-level classes only need to complete GRMN 202, 205, or equivalent.

**GRMN 300, 301 Advanced Grammar and Writing.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: German through the intermediate level or the equivalent. A systematic review of German grammar with emphasis on the elements of style and vocabulary building.

**GRMN 305 German Conversation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. Conducted in German. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

**GRMN 311 German through the Media.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. A course designed to develop language proficiency by using

material available through the various media: newspapers, magazines, films, slides, and radio broadcasts.

**GRMN 314 Commercial German.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. Designed to develop the student's ability to use German as a means of oral and written communication in the business world. Emphasis on the acquisition of technical tools necessary for business exchanges in specialized fields.

**GRMN 320 German Civilization I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. Conducted in German. A survey of German and Austrian culture from their origins to the founding of the German Empire in 1871.

**GRMN 321 German Civilization II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: German through the intermediate level or the equivalent. GRMN 320 recommended. Conducted in German. A treatment of German and Austrian culture from the founding of the German Empire in 1871 to the present. Particular emphasis on life in modern-day Austria and the Federal Republic of Germany.

**GRMN 330, 331 Survey of Literature.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: German through the intermediate level or the equivalent. Conducted in German. First semester: beginnings of German literature through the literature of the first half of the 19th century. Second semester: contemporary German literature.

**GRMN 416 The Age of Goethe.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300, 301 or 320, 321. Conducted in German. A course centering on the major movements during Goethe's lifetime: enlightenment, storm and stress, classicism, and romanticism. Representative literary works and their social, philosophical, and political backgrounds will be studied.

**GRMN 417 Intellectual Life and Culture in 19th Century Germany.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300, 301 or 320, 321. Conducted in German. The rich diversity of German intellectual and literary life in the 19th century is studied in works representing romanticism, Biedermeier, Junges Deutschland, realism and naturalism.

**GRMN 420 The Turn of the Century.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300, 301 or 320, 321. Conducted in German. A course dealing with the major intellectual, philosophical, artistic, and cultural trends from the turn of the century through the Weimar period as reflected in the writings of authors such as Kafka, Mann, and Hesse. Includes impressionism, expressionism, and neue Sachlichkeit.

**GRMN 421 The Postwar German Scene.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: GRMN 300, 301 or 320, 321. Conducted in German. A course

dealing with the political, social and intellectual developments of the German-speaking countries from the end of World War II to the present as reflected in the literary works of their major authors.

#### **GRMN 491 Topics in German.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits.

Prerequisites: GRMN 300, 301 or 320, 321. Conducted in German. An in-depth study of selected topics in language, literature or culture.

#### **GRMN 492 Independent Study.**

Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in German. Prerequisites: GRMN 300, 301 or 320, 321. Open generally only to students of junior or senior standing who have six credits of upper-level German courses and/or have a demonstrated competency in the language. Determination of course content and permission of the instructor must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

### **Courses in Italian (ITAL)**

#### **ITAL 101-102 Elementary Italian.**

Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

#### **ITAL 201 Intermediate Italian.**

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

#### **ITAL 202 Intermediate Italian Readings.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 201 or the equivalent. Designed to increase the student's proficiency in Italian through the study of selected cultural and literary texts.

#### **ITAL 205 Intermediate Conversation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ITAL 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation.

#### **ITAL 305 Italian Conversation and Civilization.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Italian through the intermediate level or the equivalent. Conducted in Italian. Practice in the spoken language with emphasis on discussion dealing with Italian civilization and culture.

### **Courses in Latin (LATN)**

#### **LATN 101-102 Elementary Latin.**

Continuous course; 4 lecture hours. 4-4 credits. First semester: a study of the Latin language with emphasis on the Latin elements found in English. Latin vocabulary. Second semester: introduction to Latin authors and related aspects of Roman civilization.

#### **LATN 201-202 Readings in Latin Literature.**

Continuous course; 3 lecture hours. 3-3 credits. Brief grammar review with a parallel study of political and literary trends and developments as found in several of the major Latin writers. First semester: prose, with emphasis on Cicero, Pliny the Younger, and Sallust. Second semester: poetry, with selected readings from Catullus, Tibullus, Ovid and Vergil.

### **Courses in Portuguese (PORT)**

#### **PORT 101, 102 Elementary Portuguese.**

Continuous courses; 5 lecture/recitation hours. 4, 4 credits. Elementary grammar, reading, and oral skills.

#### **PORT 201 Intermediate Portuguese.**

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar, with emphasis on achieving proficiency in aural comprehension, speaking, reading and writing skills.

#### **PORT 202 Intermediate Portuguese Readings.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PORT 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts.

### **Courses in Russian (RUSS)**

#### **RUSS 101-102 Elementary Russian.**

Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drill.

#### **RUSS 201 Intermediate Russian.**

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

**In order to complete Russian through the intermediate level, a student must select RUSS 202 or 205.**

#### **RUSS 202 Intermediate Russian Readings.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts. In order to complete Russian through the intermediate level, a student may select RUSS 202 or 205.

#### **RUSS 205 Intermediate Russian Conversation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RUSS 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation. In order to complete Russian through the intermediate level, a student may select RUSS 202 or 205.

#### **RUSS 301, 302 Survey of Literature.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: RUSS 201-202 or the equivalent. Conducted in Russian. First semester: 19th century; Pushkin, Gogol, Turgenev. Second semester: late 19th and 20th centuries; Dostoyevski, Chekov, and some modern Russian writers.

#### **RUSS 491 Topics in Russian.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth study of selected topics in Russian. See the Schedule of Classes for specific topics to be offered each semester.

### **Courses in Spanish (SPAN)**

#### **SPAN 101-102 Elementary Spanish.**

Continuous course; 5 lecture/recitation hours. 4-4 credits. Elementary grammar, reading, and oral drills.

#### **SPAN 201 Intermediate Spanish.**

Semester course; 3 lecture hours. 3 credits. Continuation of the essentials of grammar, with emphasis on achieving proficiency in aural comprehension, speaking, reading, and writing skills.

#### **SPAN 202 Intermediate Spanish Readings.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 201 or the equivalent. Designed to increase the student's proficiency through the study of selected cultural and literary texts. In order to complete Spanish through the intermediate level, a student may select SPAN 202 or 205.

#### **SPAN 205 Intermediate Spanish Conversation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SPAN 201 or the equivalent. Designed to increase the student's proficiency in the spoken language through audio-oral exercises, dialogues, and free conversation. In order to complete Spanish through the intermediate level, a student may select SPAN 202 or 205, or equivalent.

**Non-foreign language majors who wish to take one or two upper-level classes only need to complete SPAN 202, 205 or equivalent.**

#### **SPAN 295 Gateway to Spanish Major/Minor.**

Semester course; 1-3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. This course is composed of three discrete modules of 1 credit each: (1 credit) Portfolio Preparation: orientation to career development in Spanish, reviewing criteria of good writing, program goals and self assessment essay to begin identifying areas of interest and strengths; (1 credit) Language Proficiency: practice and review of specifics and general areas of language proficiency; (1 credit) Computer Skills: emphasis on text processing in Spanish and tutorials for grammar and pronunciation practice. Non-foreign language majors who wish to take one or two upper-level classes only need to complete SPAN 202, 205, or equivalent.

#### **SPAN 300, 301 Advanced Grammar and Writing.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. A systematic review of Spanish grammar with emphasis on the elements of style and vocabulary building, translation and composition.

#### **SPAN 305 Spanish Conversation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent.

Conducted in Spanish. Practice in the spoken language with emphasis on discussions relating to topics of current interest.

#### **SPAN 320 Civilization of Spain I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. A treatment of salient manifestations of Spanish culture and civilization from its origins to the present.

#### **SPAN 321 Latin American Civilization I.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. A treatment of salient manifestations of Latin American culture and Civilization from pre-Columbian times to the present.

#### **SPAN 330 Survey of Spanish Literature.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. A survey of Spanish literature up to the present.

#### **SPAN 331 Survey of Latin American Literature.**

Semester courses; 3 lecture hours. 3 credits. Prerequisite: Spanish through the intermediate level or the equivalent. Conducted in Spanish. An introduction to major authors and trends up to the present.

#### **SPAN 400 Spanish Translation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. Integrates the basic theoretical and practical aspects of translation, focused from a perspective of applied linguistics. The course includes a workshop component and students will practice both written and oral translation of diverse texts.

**Nine credits of 300-level courses in Spanish (including those specifically required for certain courses) are prerequisites to all the following courses.**

#### **SPAN 401/LING 401 Comparative Structures.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. A comparison of English and Spanish, with emphasis on pronunciation and problems encountered in the teaching of Spanish.

#### **SPAN 402 Language Issues in the Spanish-Speaking World.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. Through a variety of topics this course explores the links between language and human behavior as exemplified by language phenomena in the Spanish-speaking world. Topics will be drawn mainly from sociolinguistics, language and culture, and education and applied linguistics.

#### **SPAN 403 History of the Spanish Language.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. A study of the evolution of Spanish from Latin through the Middle Ages to the Modern era. Historical phonology, etymology, morphology, orthography, semantics, and syntax of standard Castilian.

#### **SPAN 414 Commercial Spanish.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. This course will develop the student's ability to use the Spanish language as a means of oral and written communication in the business world.

#### **SPAN 420 Civilization of Spain II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level, including SPAN 320 or 321, or the equivalent (including those specifically required for certain courses). This course explores the cultural diversity and differences of Spain. Topics focus on a particular interdisciplinary theme, such as the formation of cities, ethnicity, and on a particular area of Spain.

#### **SPAN 421 Civilization of Latin America II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level, including SPAN 320 or 321, or the equivalent (including those specifically required for certain courses). This course explores the cultural diversity of Latin America, and the social and political forces behind cultural change. Topics will focus on a specific interdisciplinary theme, such as urban life, the politics of identity, and on a specific area of Latin America.

#### **SPAN 430 Literary Genres.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. An in-depth look at the development and expression of varieties of literature in Spanish.

#### **SPAN 431 Literary Periods.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Conducted in Spanish. An in-depth synchronic look at movements and their context in literature in Spanish.

#### **SPAN 485 Spanish Study Abroad.**

Semester course; variable credit. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Open to Spanish majors, minors and students in other disciplines. This course offers all students the opportunity to improve their oral and written proficiency in Spanish, to enhance their awareness of cultural diversity and to become independent learners of Spanish language and the cultures of its speakers.

#### **SPAN 491 Topics in Spanish.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). An in-depth study of selected topics in Spanish. See the Schedule of Classes for specific topic to be offered each semester.

#### **SPAN 492 Independent Study.**

Semester course; variable credit. Maximum of three credits per semester; maximum total of six credits for all independent study courses in Spanish. Prerequisite: Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). Open generally only to students of junior or senior standing who have six credits of upper-level Spanish courses and/or have demonstrated a competency in the language. Determination of course content and permission of instructor and department chair must be obtained prior to registration for the course. A course designed to give students an opportunity to become involved in independent study in a literary or linguistic area or subject in which they have an interest.

#### **SPAN 495 Spanish Portfolio Seminar.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: Completion of 15 credits at the 300 and 400 levels or the equivalent. Completion of nine credits of Spanish at the 300 level or the equivalent (including those specifically required for certain courses). This course focuses on self-assessment, compiling a portfolio, career preparation and on the life-long application of skills and knowledge acquired in the program.

## **Geography**

A minor in geography is offered by the Department of Urban Studies and Planning.

## **Department of History**

### **Susan E. Kennedy**

Professor and Department Chair (1973)

B.A. 1964 Marymount Manhattan College

M.A. 1965 and Ph.D. 1971 Columbia University

Bendersky, Joseph W. (1978) Professor

B.A. 1969 City College of New York

M.A. 1970 and Ph.D. 1975 Michigan State University

Briceland, Alan V. (1966) Associate Professor

A.B. 1961 College of William and Mary

M.A. 1963 and Ph.D. 1965 Duke University

Cromey, Robert D. (1973) Associate Professor

B.A. 1966, M.A. 1971 and Ph.D. 1973 University of Wisconsin

Engel, Arthur J. (1976) Associate Professor

B.A. 1966 Clark University

M.A. 1971 and Ph.D. 1975 Princeton University

Fuller, Kathryn H. (1994) Assistant Professor

B.A. 1982 Agnes Scott College

M.A. 1989 and Ph.D. 1992 Johns Hopkins University

- Greer Jr., Harold E. (1968) Associate Professor  
 A.B. 1960, M.A. 1963 and Ph.D. 1965 University of Alabama  
 Th.M. New Orleans Baptist Theological Seminary
- Herman, John E. (1994) Assistant Professor  
 B.A. 1981 University of Oregon  
 M.A. 1988 and Ph.D. 1993 University of Washington
- Jones, Norrece T. (1983) Associate Professor of History and  
 African-American Studies  
 B.A. Hampton Institute  
 Ph.D. 1981 Northwestern University
- Messmer, Michael W. (1972) Associate Professor  
 B.A. 1964 University of Notre Dame  
 M.A. 1966 and Ph.D. 1972 Yale University
- Moitt, Bernard (1995) Assistant Professor  
 B.A. 1975 York University  
 M.A. 1977 Johns Hopkins University  
 Ph.D. 1985 University of Toronto
- Mooney, Catherine M. (1992) Associate Professor  
 B.A. 1974 St. Louis University  
 M.T.S. 1977 Harvard Divinity School  
 M.Phil. 1986, M.A. 1986 and Ph.D. 1991 Yale University
- Moore, James T. (1970) Professor  
 B.A. 1966 University of South Carolina  
 M.A. 1968 and Ph.D. 1972 University of Virginia
- Munro, George E. (1971) Professor  
 B.A. 1965 Wheaton College  
 Ph.D. 1973 University of North Carolina
- Schwarz, Philip J. (1972) Professor  
 B.A. 1962 Brown University  
 M.A. 1965 University of Connecticut  
 M.L.S. 1965 Rutgers University  
 Ph.D. 1973 Cornell University
- Talbert, Robert M. (1969) Associate Professor of History and  
 Religious Studies  
 B.A. 1959 Wake Forest University  
 M.Div. Southeastern Baptist Theological Seminary  
 Ph.D. 1970 Hebrew Union College
- Toppin, Edgar A. (1994) Distinguished Visiting Professor of  
 African-American History  
 B.A. 1949 and M.A. 1950 Howard University  
 Ph.D. 1955 Northwestern University
- Trani, Eugene P. (1990) Professor and President, Virginia  
 Commonwealth University  
 B.A. 1961 University of Notre Dame  
 M.A. 1963 and Ph.D. 1966 Indiana University
- Tunnell, Ted (1985) Associate Professor  
 B.A. 1964 North Texas State University, Denton  
 M.A. 1966 North Texas State University, Denton  
 Ph.D. 1978 University of California, Berkeley
- Urofsky, Melvin I. (1974) Professor and Director, Doctoral  
 Program in Public Policy and Administration  
 B.A. 1961, M.A. 1962 and Ph.D. 1968 Columbia University  
 J.D. 1984 University of Virginia

#### Emeriti faculty

- Bigelow, Alden G., Associate Professor Emeritus  
 B.A., M.A. and Ph.D. University of Virginia
- Blake Jr., William E., Professor Emeritus  
 B.A. University of Cincinnati  
 M.A. and B.D. Cincinnati Bible Seminary  
 Th.M. and Th.D. Union Theological Seminary

The history curriculum exposes students to a multidimensional analysis of the human past. Knowledge gained through such analysis not only has the intrinsic appeal of any disciplined intellectual inquiry, but also constitutes an indispensable basis for active citizenship and for critical thinking about the society in which the student lives.

Historical training at the undergraduate level leads to personal and social awareness within the rich tradition of the liberal arts. It also provides students an ideal preparation for a wide range of careers and further professional study.

The Department of History offers the bachelor of arts in history.

**History majors interested in teaching** early, middle, secondary or special education can enroll in an Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor of arts degree in history and a master of arts degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

Other students in the program can take advantage of a wide range of courses with thematic, topical, national, or chronological emphases to fulfill requirements and electives.

**Master of arts in history.** For information about this program, see the Graduate Bulletin.

#### Degree requirements

**Bachelor of arts in history.** The bachelor of arts curriculum in history requires a minimum of 120 credits, with at least 36 of those credits in history. In addition to the undergraduate requirements and those of the college, the student majoring in history must complete:

1. twelve credits in 100-level history area survey courses (six credits may be applied to the College of Humanities and Sciences general education requirements),
2. HIST 300 Introduction to Historical Study with a "C" grade or better prior to enrolling in more than six credits of 300- or 400-level history courses,
3. twenty-four credits in history courses at the 300-400 level,
4. three credits from among HIST 461, 462, 483, 485, 486, 490, 493, and
5. at least six credits from each of three areas:
  - a) Europe,
  - b) United States, and
  - c) Africa, Asia, Latin America.

#### Collateral requirements

In addition to the history courses required for the bachelor of arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) by course or placement.

Along with completion of general education requirements of the College of Humanities and Sciences for the bachelor of arts degree and undergraduate requirements, students may choose approved electives from any courses offered by the College of Humanities and Sciences and the schools of the Arts, Business and Education.

Students should consult with their advisers each semester to design a program which meets these requirements and suits their interests and career objectives.

#### Honors in history

To earn a bachelor of arts degree with honors in history the students must have a minimum cumulative GPA of 3.0 or a 3.0 average for their junior year, with at least a 3.3 GPA in history courses. Students must also have completed an honors paper in history. See the department adviser or chair for information about the paper requirements. An honors in history notation will appear on the transcripts of students who complete these requirements.

#### Minor in history

The minor in history consists of 18 credits, 12 of which must be at the upper level (300-400). At least three credits must be taken from HIST 300, 461, 462, 483, 485, 486, 490 or 493.

#### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in history. A full description of this program appears in Part XX of this bulletin.

#### Courses in history (HIST)

##### HIST 101, 102 Survey of European History.

Semester courses; 3 lecture hours. 3, 3 credits. A survey of European civilization from the ancient world to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Europe's place in the world. First semester: to 16th century. Second semester: 16th century to the present.

**HIST 103, 104 Survey of American History.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of American civilization from prehistory to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined America's place in the world. First semester: to Reconstruction. Second semester: Reconstruction to present.

**HIST 105, 106/AFAM 105, 106 Survey of African History.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of African civilizations from prehistory to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Africa's place in the world. First semester: to 1800. Second semester: 1800 to the present.

**HIST 107, 108 Survey of East Asian Civilizations.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of East Asian civilizations (China and Japan) from prehistory to the present, emphasizing the events, ideas and institutions that shaped, influenced and defined East Asia's place in the world. First semester: to the 14th century. Second semester: from the 14th century to the present.

**HIST 109, 110 Survey of Latin American History.**

Semester courses; 3 lecture hours. 3, 3 credits. A survey of Latin American civilization from its early civilizations to the present, emphasizing the events, ideas, and institutions that have shaped, influenced, and defined Latin America's place in the world. First semester: to 1824. Second semester: 1824 to the present.

**HIST 191 Topics in History.**

Semester course; variable; 1-3 credits per semester. Maximum total of six credits. The study of a selected topic or topics in history. See the Schedule of Classes for specific topics to be offered each semester.

**HIST 300 Introduction to Historical Study.**

Semester course; 3 lecture hours. 3 credits. History majors must complete HIST 300 with at least a "C" grade prior to enrolling in more than six credits of 300- or 400-level history courses. This introduction to the historical discipline is required of all history majors. It is designed to enhance basic research, writing and study skills in order to increase student appreciation of, and performance in, the advanced courses within the history major.

**HIST 301, 302/RELS 315, 316 The Ancient Near East.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the ancient Near Eastern civilizations of Mesopotamia, Egypt, Anatolia, and Syria-Palestine, from the preliterate period to that of the Archaemenid Empire of the Persians. First semester: preliterate period to the end of Kassite rule in Babylonia (c. 1160 B.C.). Second semester: the rise and fall of the great Neo-Assyrian, Neo-Babylonian, Hebrew, and Persian Empires (c. 331 B.C.).

**HIST 303 Greek Civilization.**

Semester course; 3 lecture hours. 3 credits. A study of the unique cultural heritage of Greece and the historical patterns that rose from it, from the Heroic Age to the urban worlds after Alexander, 1400 B.C.-146 B.C.

**HIST 304 Roman Civilization.**

Semester course; 3 lecture hours. 3 credits. A study of Roman history as it derived from Roman cultural institutions, from the Etruscan period through the conflict of the pagan and Christian worlds and advent of the barbarians, 753 B.C.-A.D. 454.

**HIST 305 Introduction to Greek Archaeology.**

Semester course; 3 lecture hours. 3 credits. Selected centers of civilization in prehistoric, classical, and Hellenistic Greece: their rise, destruction, or renewal by urban planning; the history of classical archaeology, its growth, and impact on modern European art. Emphasis is on the living context of mature and complex peoples: Crete, Mycenae, Classical and Hellenistic Greece.

**HIST 306 The Early Middle Ages.**

Semester course; 3 lecture hours. 3 credits. A topical, thematic, integrative, and problems approach to the emergence of a distinctive European community during the period frequently alluded to as the "Dark Ages."

**HIST 307/RELS 308 The High Middle Ages.**

Semester course; 3 lecture hours. 3 credits. A detailed historical analysis of the Gregorian Revolution, the Crusades, the 12th Century Renaissance, the Thomistic World, and the death of medieval civilization.

**HIST 308 Europe in Renaissance.**

Semester course; 3 lecture hours. 3 credits. Examination of the political, economic, social, cultural, and religious dimensions of the Italian and Northern European renaissances.

**HIST 309/RELS 309 The Reformation.**

Semester course; 3 lecture hours. 3 credits. A careful and intensive inquiry into the spiritual and material forces and people involved in the reformation of Christendom in 16th century Europe.

**HIST 310 Europe in Absolutism and Enlightenment, 1648-1815.**

Semester course; 3 lecture hours. 3 credits. Examines the political, social, and economic orders of Old Regime Europe in the context of their increasing contradictions; introduces the cultural and intellectual forces that helped challenge that regime; culminates in the French Revolution and Napoleon.

**HIST 311 The Zenith of European Power, 1815-1914.**

Semester course; 3 lecture hours. 3 credits. A study of the period in which the nations of Europe reached their height of world power between the reconstruction of Europe after the Napoleonic Wars and the eve of World War I. Topics includes the rise of nationalism, liberalism, and socialism; the spread of capitalism and industrial society; the beginnings of mass politics; the new imperialism; the diplomatic revolution in the European state system before World War I.

**HIST 312 The Age of Total War: Europe, 1914-1945.**

Semester course; 3 lecture hours. 3 credits. A study of the transformation of European society precipitated by World War I and World War II. Emphasis is placed on the origin, nature, and repercussions of total war; the crisis of democracy and the rise of modern dictatorships; changes in political,

economic, and social institutions; and the decline of European power.

**HIST 313 Post-War Europe, 1945 to the Present.**

Semester course; 3 lecture hours. 3 credits. An examination of Europe's social, economic, and political recovery after World War II and of the transformation of Europe from the center toward the periphery of world power.

**HIST 315, 316 History of France.**

Semester courses; 3 lecture hours. 3, 3 credits. First semester: history of France from Gallo-Roman times through the French Revolution and the Napoleonic era. Second semester: from 1815 to the present.

**HIST 317, 318 History of Germany.**

Semester courses; 3 lecture hours. 3, 3 credits. First semester: the rise of Prussia, decline of the Holy Roman Empire, and the German Confederation up to 1870. Second semester: Bismarck's Empire, the World Wars, Nazism, and post-1945 Germany.

**HIST 319, 320 History of England.**

Semester courses; 3 lecture hours. 3, 3 credits. Traces the rise of England to world hegemony and the causes of its decline as a world power. First semester: Tudor Revolution in government, Reformation, English civil wars and Restoration. Second semester: Whig oligarchy, Industrial Revolution, Victorianism, impact of world wars, problems of Empire.

**HIST 321, 322 History of Russia.**

Semester courses; 3 lecture hours. 3, 3 credits. Russian history from its origins to the present, emphasizing the development of political and social institutions and Russia's unique position between Europe and Asia. First semester: origins to 1861. Second semester: 1861 to the present.

**HIST 323 History of Spain and Portugal.**

Semester course; 3 lecture hours. 3 credits. A survey of the history of the Iberian peninsula from ancient times to the present, with an emphasis on the distinctive culture and attitude toward life that developed south of the Pyrenees.

**HIST 324 The Holocaust.**

Semester course; 3 lecture hours. 3 credits. A multidisciplinary examination of the events leading to and culminating in the Nazi extermination of six million Jews; the historical settings of European Jewry and of German fascism; the role of traditional anti-Semitism; the psychology of aggressor and victim; the Holocaust in art and literature, and the moral implications for today.

**HIST 325, 326/RELS 318, 319 History of the Jewish People.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the Jewish people from the destruction of the Second Temple in A.D. 70 to the present. First semester: Judea in Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and the impact of the Emancipation. Second semester: the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the

Holocaust, the creation of Israel, and the relations of Israel and World Jewry.

#### **HIST 327/RELS 327 History of Christianity.**

Semester course; 3 lecture hours. 3 credits. A historical and theological examination of Christianity from its origin to the present. Emphasis is placed upon an understanding of leading events, ideas, movements, and persons in their historical settings.

#### **HIST 328 Modern Middle East.**

Semester course; 3 lecture hours. 3 credits. Analysis of the history, problems, and prospects of the nations and peoples of the Middle East with emphasis on developments since the Balfour Declaration of 1917.

#### **HIST 329, 330 European Social History.**

Semester courses; 3 lecture hours. 3, 3 credits. Examines the institutions and structures of European society in the context of their changing interrelationships with politics, economics, ideas, and culture throughout European history. First semester: pre-Industrial Europe; second semester: the Industrial Age.

#### **HIST 331 Nazi Germany.**

Semester course; 3 lecture hours. 3 credits. The origin and nature of Hitler's Third Reich. A study of the failure of the Weimar Republic; genesis of the Nazi racial ideology and party structure; the Nazi political, social, and cultural order after the seizure of power; Nazi foreign policy leading to war and genocide; and an analysis of the personality of Hitler.

#### **HIST 332 History in Film.**

Semester course; 3 lecture hours. 3 credits. An examination of the uses and misuses of historical events and personalities in film. Lectures and readings are used to critically analyze films dealing with biographies, events, and propaganda.

#### **HIST 333/ECON 419 History of Economic Thought.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ECON 210-211. A survey of the ideas of major economic contributors to modern economic thought. Theories of value, growth, and distribution from the 18th through the 20th centuries will be presented.

#### **HIST 334 Comparative History of Revolutions.**

Semester course; 3 lecture hours. 3 credits. An historical investigation of the causes, events, results, and interpretation of revolution, focusing upon such subjects as revolutionary change in the ancient and medieval worlds, and the revolutions of the modern age in England, France, Mexico, Russia, China, and Cuba. Emphasis is on historical comparisons and the specific revolutions examined may vary.

#### **HIST 336 Modern European Intellectual History.**

Semester course; 3 lecture hours. 3 credits. An investigation of the main currents of European thought since 1750 which have shaped the contemporary mind. Emphasis on the interconnections between ideas and society placed in their historical contexts.

#### **HIST 337 The Origins of Modernism, 1880-1930.**

Semester course; 3 lecture hours. 3 credits. An investigation

of the interconnections between social, intellectual, and artistic change in Europe in the crucial period 1880-1930. Focus is placed on such major figures as Nietzsche, Freud, Einstein, Picasso, Duchamp, and Stravinsky in an attempt to locate the origins of contemporary artistic and intellectual experience.

#### **HIST 338 History of Socialism.**

Semester course; 3 lecture hours. 3 credits. An examination of the roots of socialism in the cultural and religious tradition of the West, its development during Europe's industrialization, its present status, and the alternative it presents to capitalism.

#### **HIST 339, 340/WMNS 339, 340 History of Women in Europe.**

Semester courses; 3 lecture hours. 3, 3 credits. A history of European women from the Greeks to the contemporary world. A major focus of both courses will be primary sources by and about women. First semester: from antiquity to the Enlightenment. Second semester: from the French Revolution to the present.

#### **HIST 341/WMNS 341 American Women's History.**

Semester course; 3 lecture hours. 3 credits. Through reading, lecture, and discussion, this course analyzes historical changes in the social, cultural, political, and economic position of women in America over the past three centuries. It includes such topics as the differences and similarities of women's experiences across lines of class, race, and ethnicity, the struggle for suffrage and social reform, shifting gender roles, and changing employment opportunities.

#### **HIST 342 Colonial America, 1585-1763.**

Semester course; 3 lecture hours. 3 credits. An examination of the development of the 13 original colonies; the establishment and growth of society, politics, and the economy; and modification in the relationship between the provinces and Great Britain.

#### **HIST 343 Two American Revolutions, 1763-1800.**

Semester course; 3 lecture hours. 3 credits. An examination of the late 18th century revolutions which molded the American political system - the revolution of colonial Englishmen against Great Britain and the revolution of the nationalists against the government established by the American Revolution, which produced and firmly established the United States Constitution.

#### **HIST 344 Ante-bellum America: 1800-1860.**

Semester course; 3 lecture hours. 3 credits. Federalist era to 1860. A study of the events, forces, and personalities that shaped Ante-bellum America and led to Southern secession and Civil War.

#### **HIST 345 Civil War and Reconstruction.**

Semester course; 3 lecture hours. 3 credits. A study of the major events, forces, personalities, and significance of the Civil War and Reconstruction eras.

#### **HIST 346 The Emergence of Modern America, 1877-1914.**

Semester course; 3 lecture hours. 3 credits. An examination of the major political, legal, social, and economic trends in

the United States at this time, focusing on the industrialization of the nation and the resulting effects it had on such diverse matters as urbanization, immigration, economic distribution, and cultural affairs, culminating in the Progressive reform movement.

#### **HIST 347, 348 20th Century U.S. History.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the political, social, economic, and cultural history of the United States in the 20th century, with emphasis on how the American people have responded to reform, war, prosperity, depression, international status, and changing relationships within government and society. First semester: to World War II. Second semester: since World War II.

#### **HIST 349, 350 American Military History.**

Semester courses; 3 lecture hours. 3, 3 credits. Analysis of the evolution, status, and conduct of the armed forces of the United States. Emphasis will be placed on the changing nature of American military thought and institutions, their performance in peace and war, and their relationship to civilian authority. First semester: to 1900. Second semester: 1900 to the present.

#### **HIST 351, 352 History of the South.**

Semester courses; 3 lecture hours. 3, 3 credits. A regional history placing particular emphasis upon the distinctive culture and problems of the South and its significance in the history of the United States. First semester: Old South, from colonial period to 1861. Second semester: New South, from 1865 to the present.

#### **HIST 355 History of Virginia.**

Semester course; 3 lecture hours. 3 credits. The course focuses on the central themes, events, and personalities of the state's history from 1607 to the present.

#### **HIST 357, 358 American Social History.**

Semester courses; 3 lecture hours. 3, 3 credits. The social life of Americans is examined in all periods of their history, focusing on the changing structure and functions of social institutions and thought. First semester: to 1876. Second semester: 1877 to the present.

#### **HIST 361, 362/AFAM 361, 362 Americans from Africa.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the history and culture of blacks in the United States, designed to analyze some of the most important aspects of black life and the attitudes of the dominant society within which blacks lived. The second semester emphasizes the changing status, expectations, and ideologies of black Americans in the 20th century. First semester: to 1877. Second semester: since 1877.

#### **HIST 363 History of the American Urban Experience.**

Semester course; 3 lecture hours. 3 credits. The evolution of colonial towns into industrial metropolises will be examined, placing emphasis on how this change determined contemporary conditions in American cities.

#### **HIST 365, 366 American Intellectual History.**

Semester courses; 3 lecture hours. 3, 3 credits. The development of American thought and attitudes, with emphasis on



trends in social and religious ideas, the rise of educational and cultural institutions, and expressions in literature and the arts. First semester: Colonial period to 1860. Second semester: 1860 to the present.

**HIST 369, 370 American Constitutional and Legal Development.**

Semester courses; 3 lecture hours. 3, 3 credits. An analysis of the development of American constitutionalism and of concomitant legal developments, emphasizing judicial review, the relationship between the Constitution and modern industrialized society, and civil rights, as well as the growth of case law and the rise of the legal profession. First semester: to 1877; Second semester since 1877.

**HIST 374 History of the American Frontier.**

Semester course; 3 lecture hours. 3 credits. A survey of the western movement in the United States from the time the first outposts were established to the end of the frontier in the 19th century. Particular attention to the influence of the frontier upon the American mind and ideals.

**HIST 375, 376 American Diplomatic History.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the role of the United States in international relations. Emphasis is placed on institutional and theoretical development and continuity as well as the role of the individual. First semester: to 1900. Second semester: since 1900.

**HIST 378 History of Central America.**

Semester course; 3 lecture hours. 3 credits. An exploration of the history of the region beginning with pre-Hispanic Indian civilizations and continuing to the present. Topics to be studied include the Spanish conquest, the liberal-conservative struggle, U.S. gunboat diplomacy, the Sandinista Revolution, civil war in El Salvador, militarism in Guatemala, and democracy in Costa Rica.

**HIST 379 The History of Modern Japan.**

Semester course; 3 lecture hours. 3 credits. This course will offer a detailed examination of Japan's modern history, from the rise of Tokugawa rule in 1600 to the end of World War II. A general overview of Japan's traditional society will give way to a historical analysis of the major social, cultural, political, and intellectual changes that occurred in Japan throughout this time period.

**HIST 381 The History of Early Modern China, 1500 to 1800.**

Semester courses; 3 lecture hours. 3 credits. Examines the last 150 years of the Ming Dynasty (1368-1644) and the first 150 years of the Qing Dynasty (1644-1912). General overview of China's traditional political economy is followed by a historical analysis of the major social, cultural, political, intellectual and economic changes that occurred in China between 1500 and 1800. In addition, students will be introduced to such concepts and issues as empire building, ethnicity and nationalism to prepare for the study of the 19th and 20th century China.

**HIST 382 The History of Modern China, 1800 to the Present.**

Semester course; 3 lecture hours. 3 credits. Examines China's modern history beginning at the height of the Qing Dynasty

(1644-1912) in 1800. A general overview of China's traditional political economy is followed by a historical analysis of the major social, cultural, political, intellectual and economic changes that occurred in China from 1800 to the present. This course is divided into three sections: the first examines the factors leading to the collapse of China's last dynasty in 1912; the second focuses on the revolutionary changes taking place in China during the first half of the 20th century (from 1912 to 1949); and the final section looks at Communist China since 1949.

**HIST 383 Ancient Egypt.**

Semester course; 3 lecture hours. 3 credits. A general survey of the history and culture of ancient Egypt from the Predynastic period through the age of the New Kingdom. In addition to the historical reconstruction, emphasis is placed on the art, literature, and religion of each of the major periods.

**HIST 384 Latin America and World Affairs.**

Semester course; 3 lecture hours. 3 credits. A survey of the relation of Latin America since the 16th century to major world developments which have occurred and in which Latin America was involved.

**HIST 385 History of Mexico.**

Semester course; 3 lecture hours. 3 credits. A study of Mexico and its culture, including early Indian civilizations, Spanish conquest, colonial period, independence, struggle for reform, revolution, and development as a modern state.

**HIST 386 History of Brazil.**

Semester course; 3 lecture hours. 3 credits. A survey of the development of Brazilian culture and institutions from the Portuguese occupation of eastern South America through the Colonial period, independent empire, and the republic to the present time.

**HIST 387/AFAM 387 History of West Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the transformation of West African societies from early times to the present, with emphasis on the rise of states and empires, the introduction, spread, and impact of Islam, the Atlantic Slave trade and its effects, colonialism, African resistance and nationalism, and developments since independence.

**HIST 388/AFAM 388 Africa: Social, Cultural, and Economic History.**

Semester course; 3 lecture hours. 3 credits. A study of economic, social, and cultural developments in Africa from the beginning of the 19th century to the present, with emphasis on agricultural and industrial development, trade, Africa's involvement in the world economy, changes in labor systems, racial dominance, African initiatives and resistance, religion and social evolution, and Africa in world affairs.

**HIST 389/AFAM 389 History of Southern Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the history and culture of the peoples of southern Africa. Deals with the areas that presently are the Republic of South Africa, Lesotho, Swaziland, Botswana, Namibia, and Zimbabwe. Emphasizes the interaction among the various communities and ethnolinguistic groups in southern Africa.

**HIST 390/AFAM 390/WMNS 390 Africa and the Americas: Slavery, Gender, and Race.**

Semester course; 3 lecture hours. 3 credits. An examination of various aspects of slavery in Africa primarily, and selected parts of the African Diaspora including the United States, Canada and the Caribbean, with emphasis on African conditions of servility, the Atlantic slave trade, and chattel slavery. The role gender and race played in slavery will be given particular attention.

**HIST 391 Topics in History.**

Semester course; 1, 2, or 3 lecture hours. Variable credit. May be repeated with different topics for a maximum of nine credits. An in-depth study of a selected topic in history. See the Schedule of Classes for specific topics to be offered each semester.

**HIST 392/AFAM 392 The Caribbean to 1838.**

Semester course; 3 lecture hours. 3 credits. An exploration of changes in the structure of Caribbean society from the late 15th century to 1838, with emphasis on the development of plantation slavery, social stratification, race, slave resistance, the Haitian Revolution, African cultural patterns and abolition.

**HIST 393/AFAM 393 Akhenaten to Cleopatra.**

Semester course; 3 lecture hours. 3 credits. A survey of Egyptian history from the period of the Empire (New Kingdom, c. 1570 B.C.) through the Ptolemaic Age of Cleopatra (c. 30 B.C.). Particular areas of concentration will include the Amarna Period of Akhenaten, and various aspects of Egyptian daily life.

**HIST 394/ANTH 394 Historical Archeology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 103 or ANTH 105 and one history course. A review of the methods and findings of historical archaeology from the 15th century to the present. Special emphasis on the use of written documents and archaeological artifacts to interpret society and culture in the modern world.

**HIST 461-462 Archival and Historical Administration.**

Continuous course; 3 lecture and 3 workshop hours. 3-3 credits. First semester: an examination of the development of archival administration with emphasis on modern techniques and practices of archival and historical administration. Second semester: workshop in which each student will receive on-the-job training in various phases of archival administration.

**HIST 483 Museum Methods.**

Semester course; 3 lecture hours. 3 credits. Practical presentation of techniques of working museums, presented in conjunction with local or regional museums.

**HIST 485 Seminar in Historiography.**

Semester course; 3 lecture hours. 3 credits. May be repeated for maximum of six credits with different topics. Introduction to questions in historiography, meaning, methodology, and interpretation in the teaching and writing of history.

**HIST 486 Seminar in Historical Methodology.**

Semester course; 3 lecture hours. 3 credits. In a seminar setting involving reading, discussion and writing, students will

explore the canons, practices, and limitations of one or more historical methodologies. Since the emphasis may shift from semester to semester, interested students should contact the instructor listed in the current Schedule of Classes.

#### **HIST 490 Seminar in History.**

Semester course; 3 lecture hours. 3 credits. Maximum nine credits. Research and analysis of a selected historical topic in a seminar setting. See the Schedule of Classes for each semester's offerings.

#### **HIST 492 Independent Study.**

Semester course; variable; 2-4 credits per semester. Maximum total of six credits. Open generally only to students of junior and senior standing who have acquired 12 credits in the departmental disciplines. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course.

#### **HIST 493 Internship.**

Semester course; variable; 2-4 credits per semester. Maximum total of six credits. Open generally to students of senior standing. Students receive credit for work on historical projects with approved agencies. Determination of the amount of credit and permission of departmental internship coordinator must be procured prior to registration for the course.

### **Courses in humanities and sciences (HUMS)**

#### **HUMS 291 Special Topics in the Humanities and Sciences.**

Semester course; 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Grade option: Pass/fail or normal letter grading. Option will be established by instructor.

#### **HUMS 391 Special Topics in the Humanities and Sciences.**

Semester course; variable; 1-4 credits. May be repeated with different content. Specialized topics in the liberal arts and sciences designed to provide an overview of a topic not provided by an existing course or program. May be multidisciplinary. Grade option: Pass/fail or normal letter grading. Option will be established by instructor.

### **Courses in humanities and sciences interdisciplinary (HUSI)**

#### **HUSI 190 College Seminar.**

1 lecture hour. 1 credit. May be repeated once for credit. Open only to students who participate in these programs. A seminar designed for first-year programs coordinated through the office of the dean of the College of Humanities and Sciences. Designed to help students integrate general education courses.

#### **HUSI 491 College Topics.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Open primarily to seniors; others with permission of instructor. A discussion of complex issues that are of enduring value or of critical interest to society. The goals of the course are to (1) bring general principles from disciplinary or a variety of disciplinary contexts to bear on specific problems; (2) exercise critical thinking; (3) understand and integrate diverse perspectives; and (4) explore models of decision making, underlying assumptions, and implications. See the Schedule of Classes for specific issues to be offered each semester.

### **International and Area Studies Program**

#### **R. McKenna Brown**

Associate Professor of Foreign Languages and Program Director (1995)  
B.A. 1977 Florida A & M University  
M.A. 1985 and Ph.D. 1991 Tulane University

#### **IASP Advisory Committee**

Charles Byles, School of Business  
Bob Godwin-Jones, Foreign Languages  
Harold Greer, History  
Njeri Jackson, African-American Studies  
David Kennamer, School of Mass Communications  
Pamela Kiecker, School of Business  
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James Sofka, Political Science and Public Policy  
Javier Tapia, School of the Arts  
Christina Turner, Sociology and Anthropology  
Judyth Twigg, Political Science and Public Policy  
Mark Wood, Philosophy and Religious Studies

The International and Area Studies Program is designed to increase awareness and sensitivity of students to the traditions, values, aspirations and concerns of people in other parts of the world. Through the completion of a minor, students may either examine the complexity of the international environment by focusing on a wide range of issues — cultural, social, economic and political — that confront the world community, or they may focus on a specific geographic area. Both options seek to expose students to the unique and/or comparative insights offered by a wide variety of cross-cultural disciplines and courses.

Although these programs are coordinated through the College of Humanities and Sciences, they are

open to all VCU undergraduate students, and they allow students to earn a minor in one of the program areas while simultaneously completing their requirements for the baccalaureate degree.

The IASP director coordinates the various components of the program, provides general advice to students, makes referrals for advising depending on the chosen track or area minor, works closely with faculty in appropriate departments who are responsible for a particular track or minor, and provides the final approval to certify that the minor has been completed.

All relevant information about the minors, including approved lists of courses for the various minors and tracks, is available from the IASP director.

#### **Students may select one of the following options:**

- 1. International studies minor with a geographic area track or a global issues track.** Within the geographic track, students may focus on Africa, Asia, Latin America, the Middle East, Russia and Eastern Europe or Western Europe.
- 2. Area studies minor in Russian-area studies or Latin American studies.**

**Study abroad.** The Russian-area studies minor and the Latin-American studies minor urge participation in a "study-abroad" program wherever possible. All students who meet eligibility requirements for the federal financial aid program are permitted to use this assistance in approved study-abroad programs. All reasonable costs associated with the study-abroad programs may be incorporated into the determination of eligibility.

### **International studies minor — 21 credits**

#### **1. Core courses** (6 credits) from:

INTL 101 Human Societies and Globalization **OR**  
INTL/POLI 105 International Relations  
INTL 490 Seminar in International Issues

#### **2. A. Geographic Track** (15 credits)

Students will select five courses in one of the following geographic areas: Africa, Asia, Latin America, the Middle East, Russia and Eastern Europe, or Western Europe.

An extensive list of approved courses is available from the director or student adviser. In addition, students must complete the study of two years of a foreign language (through 202 or 205) with a language appropriate to the geographic track.

**B. Global Issues Track (15 credits)**

In consultation with the program director or student adviser, students will select five courses from the following list. Issues range from international relations and economics to studies of the global environment and the Arab-Israeli conflict.

In addition, students must complete the study of one year of a foreign language, and are strongly encouraged to complete a second year of that language.

**The following list provides an example of some, but not all, of the courses approved for the global issues track. Approved courses vary by semester. See the student adviser during registration periods for the current semester's approved courses.**

ANTH 103 Cultural Anthropology  
CRJS 463 Comparative Criminal Justice Systems  
ECON 329 International Economics  
(Prerequisite ECON 210-211)  
FRLG 200/INTL 203 Language and Identity  
GEOG 312 History of Human Settlement  
GEOG 322 World Political Geography  
HIST 334 Comparative History of Revolutions  
HIST 337 The Origins of Modernism, 1880-1930  
MGMT 418 International Management  
MGMT 429 Introduction to Intercultural Communication  
MRBL 378 International Marketing  
POLI/AFAM/WMNS 318 Politics of Race, Class and Gender  
POLI/INTL 358 Comparative Politics  
POLI/INTL 361 Issues in World Politics  
POLI/INTL 362 International Organizations and Institutions  
POLI/INTL 363 U.S. Foreign Policy  
POLI/INTL 364 Vietnam  
POLI/INTL 365 International Political Economy  
POLI 391/INTL 491 Topics in Political Science (as appropriate)  
POLI/INTL 452 Seminar in the Politics of Developing Areas  
POLI/INTL 468 Seminar on Comparative Foreign Policy  
RELS 311, 312 Religions of the World  
SOCY/INTL 330 Global Societies: Trends and Issues  
Relevant topics courses taught by other departments may be included with the director's approval.

**Russian-area studies minor — 18 credits**

The Russian-area studies minor requires the completion of 18 credits drawn from a list of approved courses, with at least 12 credits taken at the 300-400 level. At least three credits must be taken in the humanities and three credits in the social sciences. Students are required to complete Russian language courses through the intermediate level (201-202 or 205) and laboratory. Native Russian speakers

cannot use language courses at the 200 level as part of the 18 credits for the Russian area studies minor.

Students are strongly recommended to take RUSS 301, 302. Students also are urged to complete a study abroad experience of at least one month in Russia.

Below are examples of courses that have been approved for this minor. Approved courses vary by semester. See the student adviser during the registration periods for the current semester's approved courses.

FLET 391 Topics in Foreign Literature in English Translation (humanities)  
HIST 321, 322 History of Russia (humanities)  
POLI/INTL 354 Politics of the Former Soviet Union (social sciences)  
RUSS 201 Intermediate Russian (language)  
RUSS 202 Intermediate Russian Readings (language)  
RUSS 205 Intermediate Russian Conversation (language)  
RUSS 301-302 Survey of Literature (humanities)  
RUSS 491 Topics in Russian (humanities)  
SOCY 328 Russian Society in Transition (social sciences)

Note: Topics courses in various departments and programs (most often designated 391 or 491) may be used toward the minor with the approval of the Russian area studies coordinator when the topic concerns Russia.

**Latin-American studies minor — 18 credits**

The Latin-American studies minor requires completion of 18 credits drawn from a list of approved courses, with at least 12 credits taken at the 300-400 level. No more than nine credit hours can be taken in any one discipline, and a minimum of three must be taken in each of three areas:

1. art and literature;
2. history and civilization; and
3. the social sciences. Students are required to complete Spanish or Portuguese through the intermediate level (201 and 202), and these two courses may be used as part of the 18 credits of the minor. Spanish majors and native Spanish speakers cannot use SPAN 201 and 202 and native Portuguese speakers cannot use PORT 201 and 202 as part of the 18 credits for the Latin American studies minor.

Students are strongly recommended to complete third year Spanish (300, 301, 321, 331). Students also are urged to complete a study abroad experience of at least one month in Latin America.

**Following are examples of courses that have been approved for this minor. Approved courses vary by semester. See the student adviser during the registration periods for the current semester's approved courses.**

**Art and literature**

ARTH 335 Pre-Columbian Art and Architecture  
ARTH 338 Colonial Art and Architecture of Latin America  
ARTH 427 Renaissance Art and Architecture of Colonial Latin America, 1500-1650\*  
ARTH 428 Baroque and Neoclassic Art and Architecture of Colonial Latin America\*  
ARTH 450 Art and Architecture of Mesoamerica\*  
ARTH 451 Art and Architecture of Andean America\*  
ARTH 452 Studies in Pre-Columbian Art and Architecture\*  
CRAF 369 Ancient Peruvian Textile Techniques  
SPAN 331 Survey of Latin American Literature†  
SPAN 430 Literary Genres<sup>Δ</sup>

\* The prerequisite for these courses is three credits in art history or permission of instructor.

† The prerequisite for these courses is Spanish through the intermediate level or the equivalent.

<sup>Δ</sup> Nine Spanish credits at 300 level.

Note: The following topic courses may be used toward the minor with the approval of the adviser when the topic course concerns Latin America: ARTH 474, CMLI 391, FLET 391 and SPAN 491.

**History and civilization**

HIST 378 History of Central America  
HIST 384 Latin America and World Affairs  
HIST 385 History of Mexico  
HIST 386 History of Brazil  
SPAN 321 Latin American Civilization I\*  
SPAN 421 Civilization of Latin America II<sup>Δ</sup>

\* The prerequisite for this course is Spanish through the intermediate level or the equivalent.

<sup>Δ</sup> Nine Spanish credits at 300 level.

Note: HIST 391 may be used toward the minor with the approval of the adviser when the topic concerns Latin America.

**Social sciences**

ANTH/INTL 348 South American Ethnography  
ANTH/INTL 349 Contemporary Cultures of Latin America  
ECON/AFAM 315 Economic Development\*  
POLI/INTL 353 Latin American Governments and Politics  
POLI/INTL 452 Seminar in the Politics of Developing Areas  
SPAN 402 Language Issues in the Spanish-Speaking World

\* The prerequisite is ECON 210-211 and junior standing.

Note: The following topics courses may be used toward the minor with the approval of the adviser when the topic concerns Latin America: ANTH/INTL 350, ANTH 391, ECON 491, FRLG 201/INTL 204, GEOG 334, GEOG 391, POLI 391, POLI 491, and WMNS 391.

## Courses in international studies (INTL)

### INTL 101 Human Societies and Globalization.

Semester course; 4 lecture hours. 4 credits. An interdisciplinary inquiry into sociocultural, literary, artistic, economic and political patterns both globally and in societies with varied historical experiences and divergent contemporary features. The focus of the course is comparative and thematic. It will examine institutional arrangements within societies and how these arrangements have developed, linkages between societies and their constituent organization in a world that is increasingly characterized by globalizing trends, and the implications of rapid social change for personal and collective identities and the structure of public and private relations.

### INTL 103/ANTH 103 Cultural Anthropology.

Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from non-Western cultures.

### INTL 104/ANTH 105 Introductory Archaeology.

Semester course; 3 lecture hours. 3 credits. A survey of findings of world archaeology, from the campsites of early human ancestors through the rise and spread of civilizations.

### INTL 105/POLI 105 International Relations.

Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior, and other selected issues as appropriate.

### INTL 200/AFAM 200/ANTH 200 Introduction to African Societies.

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems, and other cultural features that are traditional to its people.

### INTL 203/FRLG 203 Language and Identity.

Semester course; 4 lecture hours. 4 credits. Taught in English. This course introduces students to both the cohesive and divisive dynamics that language exerts in the world today. Students explore the links connecting different peoples who share a common language as well as their language conflicts in a multilingual world. Students examine the interaction of language with identity in culture, art, and nationalism through fiction and non-fiction texts, films and multimedia pertaining to a specific language area, such as: The Francophone World, post-Franco Spain, post-Cold War Germany, the Mayan World, or the Swahili World. See the Schedule of Classes for areas being offered in a particular semester.

### INTL 204/FRLG 204 Language and Groups in the United States.

Semester course; 4 lecture hours. 4 credits. Taught in English. This course introduces students to the sociocultural experience

and formation of identity of non-English-speaking peoples in the United States. Students explore the dynamic between English and a specific heritage language and its interaction with artistic, cultural, and social issues through fiction and non-fiction texts, films, and multimedia pertaining to specific language group, such as: Latinos, Italian-Americans, German-Americans, or Native Americans. See the Schedule of Classes for areas being offered in a particular semester.

### INTL 305/ANTH 305 Comparative Society.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. An introduction to social anthropology. The study of how social institutions such as marriage, family, law, economics, and government are organized and operate in different kinds of societies.

### INTL 328/SOCY 328 Russian Society in Transition.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of the instructor. An analysis of Russian culture and social institutions as they are today and in historical perspective. Throughout the course interrelationships among politics, the economy and social life are examined, with particular emphasis on the ideological implications of Russian/Soviet architecture, art, and mass media; on environmental issues and health; on social problems and the legal systems; and on gender, the work world, and family interaction.

### INTL 330/SOCY 330 Global Societies: Trends and Issues.

Semester course; 3 lecture hours. 3 credits. Prerequisites: INTL/POLI 105 or POLI 201 or SOCY 101. An analysis of factors that are promoting the globalization of social, economic, and political relations, and an inquiry into implications of these developments for individuals, localities, nations, and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations.

### INTL 340/GEOG 340/URSP 340 World Cities Outside of North America.

Semester course; 3 lecture hours. 3 credits. An examination of urban habitats in a variety of geographical regions with emphasis on their differences and their common experiences.

### INTL 345/EUCU 345/URSP 350 Culture and Urbanism in Great Cities of the World.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Sophomore standing or permission of instructor; course may be repeated under different topics for a total of six credits. An interdisciplinary course with a dual focus on the origin, expansion, and significance of a city and the specifics of its urban culture. Particular emphasis will be placed on relating the physical, social, and economic aspects of the city's growth and development to the cultural expression of urbanism.

### INTL 348/ANTH 348 South American Ethnography.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. General ethnographic survey of both highland and lowland indigenous cultures of South America and pertinent cultural changes due to European contact.

### INTL 349/ANTH 349 Contemporary Cultures of Latin America.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. This course surveys contemporary cultures of Latin America. It addresses sociocultural developments from an anthropological perspective and introduces some concepts from development anthropology and applied anthropology.

### INTL 350/ANTH 350 Peoples and Cultures of the World.

Semester course; 3 lecture hours. 3 credits. May be taken for a maximum of six credits in two different world areas. Prerequisite: ANTH 103. A survey of the culture and traditions within a specific geographic area such as Latin America, Oceania, or Southeast Asia. See the Schedule of Classes for areas being offered in a particular semester.

### INTL 351/POLI 351 Governments and Politics of the Middle East.

Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects in the Middle Eastern states. The courses will explore the primary bases of cleavage and conflict and the political forces that shape the policies and political dynamics of the region.

### INTL 352/POLI 352 European Governments and Politics.

Semester courses; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries.

### INTL 353/POLI 353 Latin American Governments and Politics.

Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism, and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges.

### INTL 354/POLI 354 Politics of the Former Soviet Union.

Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, processes, and disintegration of the Soviet political system, and of the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to democratic political system and a market economy. Other topics include nationality issues, social problems, and foreign policy.

### INTL 355/POLI 355 Asian Government and Politics.

Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China and India.

### INTL 356/POLI 356/AFAM 356 African Government and Politics of Africa.

Semester course; 3 lecture hours. 3 credits. This course will

introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism, and modernization strategies. Using the comparative approach, the course will primarily focus on West, East, and Central Africa.

**INTL 357/POLI 357/AFAM 357 Politics of Southern Africa.**

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region, such as Zimbabwe, Angola, and Mozambique, will be studied.

**INTL 358/POLI 358 Comparative Politics.**

Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development.

**INTL 361/POLI 361 Issues in World Politics.**

Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collectiveness, global environmental politics, as well as selected others. Topics will vary with current events and trends in the international arena.

**INTL 362/POLI 362 International Organizations and Institutions.**

Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community, the Organization of American States.

**INTL 363/POLI 363 U.S. Foreign Policy.**

Semester course; 3 lecture hours. 3 credits. A analytical survey of processes and practices in the formulation of United States foreign policy, including an introduction to the goals, problems of implementation, and current challenges faced by policy makers.

**INTL 364/POLI 364 Vietnam.**

Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of United States involvement. The course will examine closely how and why the United States became involved in Vietnam and what impact the Vietnam War has had on political institutions and behavior. In particular, the course will examine what impact the period of United States involvement has had upon U.S. foreign policy. The course also will consider additional topics including: public opinion and the war, the relationship between the president and Congress in light of the war, and contemporary U.S. politics as a backlash against the political movements of the 1960s.

**INTL 365/POLI 365 International Political Economy.**

Semester course; 3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory, and others. Policy issues include differing styles of capitalism in the

industrialized world, the political economy of development, the politics of international corporate alliances, and others.

**INTL 398 Directed Study Abroad.**

Semester course; variable; 0-8 credits per semester. May be repeated for a maximum of eight credits with approval of student's major department. Permission of academic adviser required. A course involving travel and/or residence in a foreign country as features of the student's work on a pre-arranged project. Intended primarily for students participating in student exchange programs.

**INTL 415/ANTH 415 Economic Anthropology.**

Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies.

**INTL 420/AFAM 420/ANTH 420 Women of Africa.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or AFAM 103 or permission of instructor. This course looks at the traditional roles of women in African Societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context.

**INTL 452/POLI 452 Seminar in the Politics of Developing Areas.**

Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution and civil war.

**INTL 454/ENGL 454/ANTH 450 Cross-Cultural Communication.**

Semester course. 3 lecture hours; 3 credits. A study of the dynamics of cross-cultural communication which applies linguistic tools to understanding cultural issues and solving communication problems.

**INTL 468/POLI 468 Seminar on Comparative Foreign Policy.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: POLI 201 or permission of instructor. A study of theories, models, and hypotheses of foreign policy behavior in various types of political systems with emphasis on empirical research and analysis of differences and similarities.

**INTL 490 Seminar in International Issues.**

Semester course; 3 lecture hours. 3 credits. May be taken only once. Prerequisite: INTL 340 or permission of instructor. An individualized research project focusing on international issues and undertaken in a seminar setting.

**INTL 491 Topics in International Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth study of a particular topic in international studies. See the Schedule of Classes for specific topics to be offered each semester.

**INTL 492 Independent Study.**

Semester course; variable credit, 1-3 credits with a maximum total in all independent study courses is 4 credits. Open generally to students of junior and senior standing who have acquired at least 12 credits in international studies courses. Determination of amount of credit and permission of instructor and director must be obtained before registration for the course.

**INTL 493 International Studies Internship..**

Semester course; 150 clock hours in a local, national, or international internship placement, 3 credits; or 300 clock hours. 6 credits. Maximum of six credits per student. Prerequisites: Junior or senior standing. Approval of selection committee or program director required. The internship is designed to present opportunities for qualified students to acquire exposure to internationally-oriented public and private organizations and agencies. The course includes a rigorous evaluation of the internship experience, based on learning objectives stipulated in a contract between the student, faculty adviser, and a field supervisor.

## Department of Mathematical Sciences

**James E. Ames IV**

Associate Professor and Department Chair (1985)  
B.S. 1973 Hampden-Sydney College  
M.A. 1975 and Ph.D. 1977 Duke University

**David F. Bauer**

Professor and Assistant Chair (1974)  
B.S.Ed. 1963 East Stroudsburg State College  
M.S. 1965 Ohio University  
Ph.D. 1970 University of Connecticut

**James A. Wood**

Professor and Director of Graduate Affairs (1969)  
B.S. 1961 Georgetown University  
M.A. 1963 and Ph.D. 1966 University of Virginia

**Division of Applied Mathematics and Mathematics**

Abay-Asmerom, Ghidewon (1991) Associate Professor  
B.S. 1986 Andrews University  
M.A. 1987 and Ph.D. 1990 Western Michigan University  
Berglund, John F. (1972) Professor and Director, University Honors Program  
B.A. Ohio Wesleyan University  
Ph.D. 1967 Tulane University  
Deveney, James K. (1974) Professor  
B.S. 1970 Boston College  
Ph.D. 1974 Florida State University  
Farley, Reuben W. (1968) Professor  
B.S. 1961 Randolph-Macon College  
M.A. 1965 and Ph.D. 1968 University of Tennessee

Haver, William E. (1977) Professor  
 B.S. 1964 Bates College  
 M.S. 1967 Rutgers University  
 Ph.D. 1970 State University of New York, Bingham

Kent, Candace (1998) Assistant Professor  
 B.A. 1979 Wellesley College  
 M.S. 1993 University of Rhode Island  
 Ph.D. 1998 University of Rhode Island

Lewis, Andrew M. (1994) Assistant Professor  
 B.A. 1967 Harvard University  
 Ph.D. 1993 University of California, Berkeley

Lohr, C. Michael (1966) Associate Professor of Mathematical Sciences and Teacher Education  
 B.S. 1960, M.Ed. 1963 and Ed.D. 1968 University of Virginia

Morris, J. Richard (1969) Associate Professor  
 B.S. 1957 and M.S. 1960 Virginia Polytechnic Institute and State University  
 M.A. 1965 and Ph.D. 1969 University of Alabama

Raychowdhury, Pratip N. (1969) Professor  
 B.S. and B.A. University of Calcutta  
 M.S. Brigham Young University  
 Ph.D. 1966 George Washington University

Schmeelk, John F. (1975) Professor  
 B.S. 1962 Seton Hall University  
 M.S. 1965 New York University  
 Ph.D. 1976 George Washington University

Sedaghat, Hassan (1990) Associate Professor  
 B.S. 1981, M.A. 1983 and Ph.D. 1990 George Washington University

Terrell, William J. (1991) Associate Professor  
 B.S. 1975 North Carolina State University  
 M.S. 1976 Northwestern University  
 Ph.D. 1990 North Carolina State University

Vassilev, Janet (1998) Assistant Professor  
 B.A. 1991 University of Chicago  
 M.A. 1993 and Ph.D. 1997 University of California, Los Angeles

Vogel, Judith A. (2000) Assistant Professor  
 B.S. 1993 Richard Stockton College  
 M.A. 1996 and Ph.D. 2000 Temple University

#### Division of Computer Science

Brilliant, Susan S. (1989) Associate Professor  
 B.S. 1972 Wake Forest University  
 M.S. 1977 Virginia Commonwealth University  
 Ph.D. 1988 University of Virginia

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 B.A. 1964 National Taiwan University  
 Ph.D. 1970 Notre Dame University  
 Ph.D. 1979 Clarkson University

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 B.S. 1987 University of Dayton  
 M.S. 1989 Ohio State University  
 Ph.D. 1994 University of Connecticut

Murrill, Branson W. (1984) Associate Professor  
 B.S. 1974 College of William and Mary  
 M.S. 1977 University of Virginia  
 Ph.D. 1991 College of William and Mary

Parker, Lorraine M. (1981) Associate Professor  
 B.S. University of Bath

Ph.D. 1981 University College of Swansea  
 Primeaux, David (1996) Assistant Professor  
 Ph.D. 1975 University of Louvain  
 Resler, Daniel R. (1992) Assistant Professor  
 B.S. 1978 Illinois State University  
 M.S. 1985 University of Colorado  
 Ph.D. 1991 Queens University of Belfast

#### Division of Operations Research and Statistics

Davenport, James M. (1987) Associate Professor  
 B.A. 1964 West Texas State University  
 M.S. 1969 and Ph.D. 1971 Southern Methodist University

Henry, Neil W. (1975) Associate Professor of Mathematical Sciences and Sociology and Anthropology  
 B.A. 1958 Wesleyan University  
 M.A. 1960 Dartmouth College  
 Ph.D. 1970 Columbia University

Johnson, Robert E. (1982) Associate Professor  
 B.S. 1976 and M.A. University of North Carolina, Greensboro  
 Ph.D. 1983 University of North Carolina, Chapel Hill

Mays, D'Arcy P. (1993) Assistant Professor  
 B.S. 1988, M.S. 1989 and Ph.D. 1993 Virginia Polytechnic Institute and State University

Mays, James E. (1996) Assistant Professor  
 B.S. 1990, M.S. 1991 and Ph.D. 1995 Virginia Polytechnic Institute and State University

Merrick, Jason (1998) Assistant Professor  
 M.S. 1993 Worcester College  
 Ph.D. 1997 George Washington University

Street IV, Scott W. (2000) Assistant Professor  
 B.S. 1990 Hampden-Sydney College  
 M.A. 1992 Wake Forest University  
 Ph.D. 1997 University of South Carolina

Williamson, Patricia Pepple (1986) Associate Professor  
 B.S. 1981, M.S. 1983 and Ph.D. 1986 Bowling Green State University

#### Emeriti faculty

Glynn, William A., Professor Emeritus  
 B.S. 1960 Northeastern (Oklahoma) State College  
 M.S. 1962 Oklahoma State University  
 Ph.D. 1965 Oklahoma State University

Minton, Paul D., Professor Emeritus of Mathematical Sciences and Biostatistics  
 B.S. and M.S. Southern Methodist University  
 Ph.D. North Carolina State University

Schedler, David A., Associate Professor Emeritus  
 B.A. 1960 Oklahoma State University  
 M.S. 1963 Oklahoma State University  
 Ph.D. 1971 George Washington University

The curriculum in mathematical sciences promotes understanding of the mathematical sciences and their structures, uses and relationships to other disciplines. To this end, the scholarly growth of the faculty and students in the mathematical sciences is nurtured through study, research and a high standard of teaching. The curriculum

provides a sound foundation for the student seeking to enter a career with a technological orientation or for the student who wishes to pursue graduate study in applied mathematics, computer science, mathematics, operations research, statistics or related fields.

The Department of Mathematical Sciences offers a **bachelor of science in mathematical sciences** and a **bachelor of science in computer science**. Each degree contains a required core of courses that provide a foundation for more specialized work, while furnishing an introduction to a variety of areas in the mathematical sciences.

Students in the bachelor of science in mathematical sciences can choose from five areas of concentration.

- 1. Applied mathematics/mathematical sciences** concentrates on the analytical and computational techniques necessary to solve many of today's problems. These methods had been applied traditionally in such areas as chemistry and physics, but are now applied in many other areas.
- 2. Computer science/mathematical sciences** provides the student, through the mathematical foundations and the practical applications of computers, with the expertise to function effectively in this rapidly expanding discipline. This concentration equips the student with a solid education in computer science, yet gives the student the flexibility to pursue other areas of study.
- 3. Mathematics/mathematical sciences** fosters the understanding of the power and the beauty of pure mathematics and its applications to various branches of knowledge.
- 4. Operations research/mathematical sciences** focuses on modern mathematical techniques for solving problems arising from other fields, such as engineering, business, or economics.
- 5. Statistics/mathematical sciences** teaches students how mathematical models used in the investigation of uncertain phenomena are developed and applied to experimental and nonexperimental data.

As an alternative to the above concentrations, students may design an individual plan of study with the help of their advisers.

**Mathematical sciences majors interested in teaching careers** in early, middle, secondary or special education can enroll in an Extended Teacher Education Program that results in the simultaneous awarding of a bachelor's degree in mathematical sciences and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of

Humanities and Science, contact the School of Education's Office of Academic Services.

The **bachelor of science in computer science** is a rigorous, highly concentrated curriculum of computer science courses accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board. It includes advanced study in several important areas of computer science and provides a strong foundation in this discipline.

The Department of Mathematical Sciences also offers a mathematical sciences certificate in computer science or in statistics for students in other programs. Additionally, the department offers required and elective courses to students in the mathematical sciences program, and to those in other fields of study.

### Degree requirements

**Bachelor of science in mathematical sciences.** The bachelor of science in mathematical sciences requires a minimum of 120 credits with at least 41 of those credits in courses labeled CMSC, MATH or STAT. Along with the general education requirements of the College of Humanities and Sciences and the undergraduate requirements, students are required to take core courses and fulfill specific requirements for the degree.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151 Precalculus Mathematics. No more than one course in mathematics (MATH) at the 100 level can count for the general requirements toward the bachelor of science degree. Credit for 100-level mathematical sciences courses cannot be applied toward the mathematical sciences courses required for the major in mathematical sciences.

**Mathematical sciences majors are required to complete all of the following:**

- A. Complete one of the following sequences:
  1. BIOL 151, 152 and 151L, 152L Introduction to Biological Sciences and Laboratory I, II
  2. CHEM 101-102 and 101L, 102L General Chemistry and Laboratory I, II
  3. PHYS 207, 208 University Physics I, II or PHYS 201-202 General Physics
- B. Complete another course, including laboratory, in the natural sciences from the list of courses approved for satisfying the general education requirements of the College

of Humanities and Sciences. This course must be in the life sciences if the chemistry or physics sequence was selected in A above. It must be in the physical sciences if the biology sequence was chosen in A above.

- C. Complete one other course in the natural sciences or complete a minor or second major offered outside the Department of Mathematical Sciences.

Completion of the previously mentioned requirements will satisfy the College of Humanities and Sciences natural sciences general education requirements.

**Core.** All students are required to take  
CMSC 255 Structured Programming  
MATH 200-201 Calculus with Analytic Geometry  
MATH 211 Mathematical Structures  
STAT 212 Concepts of Statistics

**Concentrations.** By completing the listed requirements, students may obtain a designation on their transcript that their study has emphasized one of the following concentrations. Students may choose to meet the requirements of more than one concentration.

#### 1. B.S. in applied mathematics/mathematical sciences

MATH 301 Differential Equations  
MATH 307 Multivariate Calculus  
MATH 310 Linear Algebra  
MATH 512 Complex Analysis for Applications  
MATH 517-518 Methods of Applied Mathematics  
Six additional upper-level credits in mathematical sciences (MATH 302 Numerical Calculus, MATH 437 Applied Partial Differential Equations, and MATH 511 Applied Linear Algebra are recommended.  
Students in this concentration should elect at least one upper-level course in chemistry or physics. (CHEM 510 Atomic and Molecular Structure is recommended.)

#### 2. B.S. in computer science/mathematical sciences

CMSC 256 Data Structures and Advanced Programming  
CMSC 301 Introduction to Discrete Structures  
CMSC 311 Computer Organization and Assembler Language Programming  
CMSC 312 Introduction to Operating Systems  
CMSC 401 Algorithm Analysis with Advanced Data Structures  
CMSC 403 Programming Languages  
CMSC 490 Research Seminar  
One 500-level computer science course  
Three additional upper-level credits in mathematical sciences

#### 3. B.S. in mathematics/mathematical sciences

MATH 307 Multivariate Calculus  
MATH 310 Linear Algebra  
MATH 501 Introduction to Abstract Algebra  
MATH 507-508 Analysis I-II  
MATH 509 General Topology I  
Six additional upper-level credits in mathematical sciences

#### 4. B.S. in operations research/mathematical sciences

MATH 307 Multivariate Calculus

MATH 309 Introduction to Probability Theory  
MATH 310 Linear Algebra  
MATH 327 Mathematical Modeling or STAT 503 Introduction to Stochastic Processes  
MATH 527-528 Mathematical Foundations of Operations Research  
Six additional upper-level credits in mathematical sciences

#### 5. B.S. in statistics/mathematical sciences

MATH 307 Multivariate Calculus  
MATH 309 Introduction to Probability Theory  
MATH 310 Linear Algebra  
STAT 404 Introduction to Statistical Inference  
STAT 541 Applied Statistics for Engineers and Scientists  
STAT/BIOS 544 Statistical Methods II  
Three additional upper-level credits in statistics  
Three additional upper-level credits in mathematical sciences

Students who meet the requirements for two of the concentrations within the mathematical sciences curriculum can receive a double major. Likewise, students who meet the requirements for one of the concentrations and for the computer science degree can also achieve a double major, unless the concentration is computer science. To initiate a double major, students must obtain the appropriate form from the Office of Records and Registration.

With the approval of the departmental Undergraduate Credentials Committee and their academic adviser, students can design their own plan of study which will result in a bachelor of science in mathematical sciences. This student-planned curriculum must contain at least 24 credits in upper-level (300-500) mathematical sciences courses.

### Degree requirements

**Bachelor of science in computer science.** The bachelor of science curriculum in computer science requires a minimum of 120 credits, with at least 57 of those credits in courses labeled CMSC, MATH or STAT.

Along with the general education requirements of the College of Humanities and Sciences and the undergraduate programs, students must also take required courses and fulfill specific degree requirements.

Based on the results of the Mathematics Placement Test, students may be required to take MATH 151 Precalculus Mathematics. No more than one course in mathematics (MATH) at the 100 level can be applied to the general requirements for the bachelor of science degree. Credit for 100-level mathematical

sciences courses may not be applied toward the mathematical sciences requirements for the computer science major.

**Computer science majors are required to complete all of the following:**

A. Complete one of the following sequences:

1. CHEM 101-102, 101L-102L General Chemistry and Laboratory I-II
2. PHYS 207, 208 University Physics I, II

B. Complete another course, including laboratory, in the life sciences from the list of courses approved for satisfying the general education requirements of the College of Humanities and Sciences.

C. Complete another course in the natural sciences. This course must be either an upper-level course in any natural science, or one of the courses listed in A above, or a second course in the life sciences from the list of courses approved for satisfying the general education requirements for the College of Humanities and Sciences.

Completion of the above-mentioned requirements will also satisfy the College of Humanities and Sciences general education requirements.

#### Required mathematics and statistics courses

MATH 200-201 Calculus with Analytic Geometry

MATH 211 Mathematical Structures

STAT 212 Concepts of Statistics

One of MATH 301 Differential Equations, MATH 302

Numerical Calculus, MATH 310 Linear Algebra, or MATH 351 Applied Abstract Algebra.

#### Required computer science courses

CMSC 255 Structured Programming

CMSC 256 Data Structures and Advanced Programming

CMSC 301 Introduction to Discrete Structures

CMSC 311 Computer Organization and Assembler Programming Language

CMSC 312 Introduction to Operating Systems

CMSC 401 Algorithm Analysis with Advanced Data Structures

CMSC 403 Programming Languages

CMSC 490 Research Seminar

CMSC 505 Computer Architecture

CMSC 508 Data Base Theory

Twelve additional credits chosen from upper-level computer science courses. STAT 321 Introduction to Statistical Computing may be used to satisfy three of these credits.

#### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in mathematical sciences. For a full description of this program, see Part XX of this bulletin.

#### Minor requirements — general

A minimum GPA of 2.0 must be achieved in the minor, and credit for 100-level mathematical sciences courses cannot be applied to the minor. Mathematical sciences and computer science majors cannot minor in a Department of Mathematical Sciences' program.

#### Minor in mathematical sciences

A minor in mathematical sciences consists of at least 18 credits offered by the Department of Mathematical Sciences, including a minimum of three credits of calculus and nine upper-level credits.

Neither STAT 208, STAT 210 nor any 100-level course can be used to fulfill the required 18 credits.

#### Minor in computer science

A minor in computer science consists of at least 18 credits offered by the Department of Mathematical Sciences, including CMSC 255, CMSC 256, MATH 211, and nine upper-level credits in computer science.

#### Minor in statistics

The requirements for this minor are identical to those for the minor in mathematical sciences, except that the nine upper-level credits must be earned in statistics courses. It is strongly recommended, though not required, that students minoring in statistics take MATH 211 Mathematical Structures, and STAT 212 Concepts of Statistics.

#### Post-baccalaureate programs in mathematical sciences

For students currently holding a bachelor's degree in the appropriate discipline, the Department of Mathematical Sciences offers the master of science in mathematical sciences, the master of science in computer science, and the master of education in mathematics education. For information about any of these programs consult the Graduate Bulletin.

#### Second baccalaureate degrees and mathematical sciences certificates in computer sciences and statistics

For students possessing a bachelor's degree and wishing to gain undergraduate preparation in an area of mathematical sciences, the department offers several options.

Second baccalaureate degrees are offered through the department. For detailed information about these programs consult Part VI of this bulletin.

The mathematical sciences certificate in computer science is available to students who have received bachelor's degrees in other areas and wish to pursue the study of computer science. Students who receive certification through this program equip themselves for many professional opportunities in the scientific community and with government agencies. The certification also is designed to allow interested students to prepare for graduate study in computer science.

Certification through this program requires a minimum of 33 credits in mathematical sciences courses at the 200 level or higher. Course work completed before or after receiving the bachelor's degree can be applied to the certification.

Included among the 33 credits must be the following:

- A. At least 18 credits from courses in mathematical sciences at the 300 level or higher earned at VCU after the candidate has received a bachelor's degree.
- B. Of the 18 credits listed in part A, at least 15 credits must be in computer science with at least six of these credits at the 400 level or higher; CMSC 311 Computer Organization and Assembler Language Programming, and CMSC 401 Algorithm Analysis with Advanced Data Structures are required courses for certificate students.
- C. At least nine credits in approved electives in mathematical sciences other than computer science. A calculus course must be included among these credits.

Upon successful completion of all course work in five years or less, with a grade of "C" or better in each course and a GPA of 2.5 or better, the student is awarded the mathematical sciences certificate in computer science. Successful completion of this program does not guarantee admission to the master's degree program in mathematical sciences.

Students seeking admission into this program should contact the Department of Mathematical Sciences.

The mathematical sciences certificate in statistics is open to students who have received bachelor's degrees in other areas. The primary goal of the program is to allow students with undergraduate majors in science, engineering and the social sciences an opportunity to acquire the formal training in statistics that is currently in demand in industry and government. Some students also may find this program a useful way to prepare for graduate study in statistics.



To be admitted to the program, a student must have completed a course of study leading to a baccalaureate degree. A student with limited college mathematics experience must take the Mathematics Placement Test before entering the program. Application materials and further information can be obtained by calling (804) 828-1301, TDD (804) 828-0100 or writing to the following address: Post-baccalaureate Certificate in Statistics, Department of Mathematical Sciences, Virginia Commonwealth University, Richmond, VA 23284-2014.

The certificate program in statistics requires completion of a minimum of 32 approved credits at the 200 level or higher in mathematical sciences or related areas. A maximum of 14 credits toward certification can be transferred from course work completed before or after receiving the bachelor's degree. At least 18 approved credits must be from courses in statistics and probability at the 300 level or higher and must be taken at VCU. No more than six of these 18 credits can be from courses taken before admission to the certificate program. The student must achieve a GPA (on courses taken at VCU) of 2.5 or better with no grade below "C." All requirements for the certificate must be completed within five years of admission to the program.

The following courses are required:

MATH 200-201 Calculus with Analytical Geometry (or equivalent)  
CMSC 201 Introduction to Computing using FORTRAN or CMSC 255 Structured Programming (or equivalent)  
STAT 210 Basic Practice of Statistics (or equivalent)  
MATH 309 Introduction to Probability Theory  
STAT 404 Introduction to Statistical Inference  
STAT 541 Applied Statistics for Engineers and Scientists  
STAT/BIOS 544 Statistical Methods II

Students will work closely with the program coordinator in selecting appropriate elective courses. While some students may have the background necessary for a 600-level graduate course, it is expected that most elective courses will be drawn from the 300-500-level statistics course offerings of the department. Statistics courses taught in other units of the university may be credited toward the certificate with the permission of the program coordinator.

## Courses in computer science (CMSC)

**Students registering for CMSC 201, 255 or MATH 131, 141, 151, 200, 211, or STAT 208 or 210 must have taken the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU.**

### CMSC 128 Computer Concepts and Applications.

Semester course; 3 lecture hours. 3 credits. Introduction to basic hardware and software concepts. Applications of various types of software in psychology, political science, statistics, mass communications and education will be demonstrated and discussed. Students will gain hands-on experience in word processing, the use of the Internet including e-mail, and other selected applications. Can be used to satisfy the College of Humanities and Sciences requirement for computer literacy. Students may not receive degree credit for both CMSC 128 and any of CMSC 150, INFO 160, INFO 161 and INFO 162.

### CMSC 191 Topics in Computer Science.

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: Permission of the instructor. This course will teach selected topics in computer science. See the Schedule of Classes for specific topics and prerequisites.

### CMSC 201 Introduction to Computing Using FORTRAN.

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisite: MATH 141 or MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Introduction to the concept and practice of structured programming using FORTRAN. Elementary computer concepts, problem solving, top-down design of algorithms, basic FORTRAN syntax, including control structures, arrays, and subroutines.

### CMSC 245 Introduction to Programming Using C++.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 151 or satisfactory score on the Mathematical Placement Test. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using C++. Problem solving, top-down design of algorithms, objects, basic C++ syntax, control structures, functions and arrays. This course is intended for Engineering majors.

### CMSC 246 Advanced Programming Using C++.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 245. Advanced programming in C++. Topics include program design, objects, classes, inheritance, files, strings, linked lists, stacks, queues, binary trees, recursion, and basic searching and sorting techniques. This course is intended for engineering majors.

### CMSC 255 Structured Programming.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Students are expected to have fundamental computer skills. Introduction to the concepts and practice of structured programming using Java. Problem solving, top-down design of algorithms, objects basic Java syntax, control structures, functions and arrays.

### CMSC 256 Data Structures and Advanced Programming.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 255 and MATH 211. Advanced programming using Java. Topics include program design, objects, classes, inheritance, files, strings, linked lists, stacks, queues, binary trees, recursion, and basic searching and sorting techniques.

### CMSC 301 Introduction to Discrete Structures.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 255 and MATH 211. A continuation of MATH 211. Recursion and induction. Operations on sets and relations. Formal languages with an emphasis on finite state automata and grammars. Monoids and graphs (trees in particular). Elementary combinatorics and advanced Boolean algebra.

### CMSC 311 Computer Organization and Assembler Language Programming.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 256. Registers, instruction set issues, data representation, data storage and processing, subprograms and parameter passing, macros and conditional assembly, interrupts, I/O, and arithmetic, logical, and control operations.

### CMSC 312 Introduction to Operating Systems.

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 311 or EGRE 364. Computer systems design, I/O processing, secondary memory organization, command languages, memory management and job scheduling.

### CMSC 391 Topics in Computer Science.

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: Permission of the instructor. This course will teach selected topics in computer science. See the Schedule of Classes for specific topics and prerequisites.

### CMSC 401 Algorithm Analysis with Advanced Data Structures.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 and CMSC 301. Introduction to algorithm analysis and complexity classes. Advanced data structures topics including multiple linked lists, height-balanced trees, B-trees, file organization, and graphs. Analysis of various searching and sorting algorithms. Algorithm design topics include divide-and-conquer, dynamic programming, greedy methods, and heuristic search.

### CMSC 403 Programming Languages.

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 301 and CMSC 311. Survey of representative modern

programming languages. Formal definition of programming languages including specifications of syntax and semantics. Precedence, infix, prefix, and postfix notation. Global properties of algorithmic languages. Sub-routines, co-routines, and tasks. List processing, string manipulation, data description, and simulation languages. Run-time representation of program and data structures.

#### **CMSC 419 Software Methods.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 246, EGRE 364. An introduction to the methodologies required to control the complexity involved in the development of large software systems. Students will apply software engineering techniques to an engineering problem. Students may not receive credit for both CMSC 419 and either CMSC 519 or CMSC 520. Not applicable toward the computer science major requirements.

#### **CMSC 490 Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: CMSC 312, 401, 403 and ENGL 200. Discussion of research and presentation methods in computer science, ethics in computer science, and other topics in computer science as stimulated by independent reading in selected areas. Each student will write at least two research papers and give at least one oral presentation.

#### **CMSC 492 Independent Study.**

Semester course; variable; 2, 3, 4 credits per semester. Maximum four credits per semester; maximum total of six credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

#### **CMSC 502 Concepts of Concurrency.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 312 and CMSC 401. Software and hardware mechanisms for providing mutual exclusion in uniprocessor and multiprocessor environments. Concurrency problems and solutions in a distributed environment including message passing and remote procedure calls.

#### **CMSC 504 Compiler Construction.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and CMSC 403. Review of programming language structures, translation, loading, execution, and storage allocation. Compilation of simple expressions and statements. Organization of a compiler. Use of bootstrapping and compiler writing languages.

#### **CMSC 505 Computer Architecture.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 301 and CMSC 311. Basic digital circuits combination logic, data transfer, and digital arithmetic. Memory and memory access, control functions, CPU organization, micro-programming, input/output interfaces.

#### **CMSC 506 Computer Networks and Communications.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 312. Theoretical and applied analysis of basic data communication systems. Design of networks in the framework of the OSI reference model. Local and Wide Area Networks. Performance analysis of networks. Error control and security.

#### **CMSC 508 Data Base Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 401. Design and implementation of hierarchical, network, and relational data base systems. Relational algebra, normal forms and normalization.

#### **CMSC 509 Artificial Intelligence.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and CMSC 403. Problem spaces, problem-solving methods, game playing, knowledge representatives, expert systems, natural language understanding.

#### **CMSC 511 Computer Graphics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and MATH 310. Presents mathematical techniques for picture development and transformation, curve and surface approximation and projections, graphical languages and data structures and their implementation, graphical systems (hardware and software).

#### **CMSC 519 Software Engineering.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 256 and CMSC 301. Overview of the software engineering process and software life cycle models. Detailed study of planning, specification and design phases. Students will gain experience in developing specification and design documents and user documentation.

#### **CMSC 521 Introduction to the Theory of Computation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 301. An introduction to automata theory, formal languages and computability. Topics include finite automata, pushdown automata, Turing machines, decidability and computational complexity.

#### **CMSC 525 Introduction to Software Analysis, Testing, and Verification.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CMSC 401 and 403. An introduction to concepts and techniques used in the analysis of software for certain properties. Using analytic results to derive test data and verify the correct implementation of programs. Flow graphs, fault/failure model, theoretical and practical limitations. Control flow, data flow, and error flow analyses. Testing strategies including random, structural, mutation, and error flow. Software metrics.

#### **CMSC 526 Theory of Programming Languages.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CMSC 403. An introduction to the formal semantics of programming languages, logic programming and functional programming. Topics include denotational semantics, attribute grammars, Backus Formal Functional Programming, fixed point semantics, model-theoretic semantics and PROLOG.

#### **CMSC 554 Applications of Computers in the Teaching of Mathematics I.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: 17 credits at the 200 level or above in mathematics or permission of the instructor. Introduction to computers and programming language, BASIC. Applications of the computer in algebra, geometry, trigonometry, statistics, and calculus. Not applicable toward certificate program, B.S., or M.S. degrees in mathematical sciences or computer science.

#### **CMSC 591 Topics in Computer Science.**

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisites may vary. Permission of the instructor required. Course is open to qualified undergraduates. Selected topics in computer sciences such as: Theory of data bases, information retrieval and artificial intelligence.

### **Courses in mathematics (MATH)**

**Students registering for CMSC 201, 255, or MATH 131, 141, 151, 200, 211, or STAT 208 or 210 must have taken the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Credit for no more than one course may be earned from among MAT 101, MAT 111/BUS 111, MAT 141.**

#### **MATH 001 Elementary Algebra.**

Semester course; 3 lecture or 3 laboratory-tutorial hours. No credit. Prerequisite: Permission of the department chair. The purpose of this course is to provide laboratory and tutorial instruction for those seeking remediation or review of high school algebra. Topics include basic properties of real numbers, operations with algebraic expressions, solution of equations and inequalities, exponents and radicals, introduction to functions and graphing.

#### **MATH 131 Introduction to Contemporary Mathematics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 001 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Topics include optimization problems; data handling; growth and symmetry; and mathematics with applications in areas of social choice. Major emphasis is on the process of taking a real-world situation, converting the situation to an abstract modeling problem, solving the problem and applying what is learned to the original situation. Serves as a prerequisite for STAT 208 or 210, but does not serve as a prerequisite for calculus or other advanced mathematical sciences courses.

#### **MATH 141 Algebra with Applications.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: One year of high school algebra and satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at

VCU. Topics include sets, functions, exponents, logarithms, matrix algebra, systems of linear equations, inequalities, binomial theorems, sequences, series, complex numbers, and linear programming. Students may not receive degree credit for both MATH 141 and MATH 101. Credit for no more than one course may be earned from among MATH 101, MATH 111, MATH 141, and MATH 151.

#### **MATH 151 Precalculus Mathematics.**

Semester course; 3 lecture and 1 mathematics laboratory/recitation hours. 4 credits. Prerequisite: MATH 141 or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Concepts and applications of algebra and trigonometry. Topics include graphics, transformations and inverses of functions; linear, exponential, logarithmic, power, polynomial, rational, and trigonometric functions. Credit for no more than one course may be earned from among MATH 101, MATH 111, MATH 141, and MATH 151.

#### **MATH 185 Computational Linear Algebra.**

Semester course; 2 lecture hours. 2 credits. Corequisite: MATH 200. Prerequisite: MATH 141 or MATH 151 or satisfactory score on the Mathematics Placement Test. Course intended for freshmen engineering students. Euclidean vectors, systems of linear equations, matrices, determinants, matrix inverse independence, bases, eigenvector and eigenvalue problems.

#### **MATH 191 Topics in Mathematics.**

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. For a course to meet the general education requirements it must be so stated in the Schedule of Classes. See the Schedule of Classes for specific topics and prerequisites.

#### **MATH 200-201 Calculus with Analytic Geometry.**

Continuous course; 4 lecture hours. 4-4 credits. Prerequisite for MATH 200: MATH 151 or satisfactory score on the VCU Mathematics Placement Test (algebra section) within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Prerequisites for MATH 201: MATH 200. Limits, continuity, derivatives, differentials, antiderivatives, and definite integrals. Applications of differentiation and integration. Selected topics in analytic geometry. Infinite series.

#### **MATH 211 Mathematical Structures.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 151 or a satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. An introduction to mathematical logic and set theory, including applications in Boolean algebras and graph theory. A core course for mathematical sciences.

#### **MATH 291 Topics in Mathematics.**

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the Schedule of Classes for specific topics and prerequisites.

#### **MATH 301 Differential Equations.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. Solution of ordinary differential equations of first order. Linear differential equations with constant coefficients using operator methods. Series solutions and applications.

#### **MATH 302 Numerical Calculus.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CMSC 201 or demonstrated knowledge of FORTRAN and MATH 201. An introduction to numerical algorithms for solving systems of linear equations, finding zeroes, definite integration, minimization, etc. Those features of FORTRAN that affect the precision of numerical computations will be included.

#### **MATH 303 Investigations in Geometry.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Prerequisites: MATH 131 and STAT 208, 210 or 212. A study of topics in Euclidean geometry to include congruence, similarity, measurement, coordinate geometry, symmetry, and transformation in both two and three dimensions. These topics will be investigated using manipulatives and computer software. May be used for credit towards the degree by mathematical sciences majors; but does not count toward the 24 upper division mathematical sciences credits required for these majors.

#### **MATH 305 Elementary Number Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 211. Divisibility, congruences, Euler phi-function, Fermat's Theorem, primitive roots, Diophantine equations.

#### **MATH 307 Multivariate Calculus.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. The calculus of vector-valued functions and of functions of more than one variable. Partial derivatives, multiple integrals, line integrals, surface integrals, and curvilinear coordinates. Lagrange multipliers; theorems of Green, Gauss, and Stokes. Applications.

#### **MATH 309 Introduction to Probability Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 201. A study of the mathematical theory, including finite and infinite sample spaces, random variables, discrete and continuous distributions, mathematical expectation, functions of random variables, and sampling distributions.

#### **MATH 310 Linear Algebra.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200 and (MATH 211 or 201). Systems of linear equations, vector spaces, linear dependence, bases, dimensions, linear mappings, matrices, determinants, quadratic forms, orthogonal reduction to diagonal form, eigenvalues, and geometric applications.

#### **MATH 327 Mathematical Modeling.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 200. Fundamental concepts of mathematical modeling.

Differential equation models. Optimization models. Probabilistic models. Practical problems will be discussed throughout.

#### **MATH 351 Applied Abstract Algebra.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 211. A survey of several areas in applied abstract algebra which have applications in computer science such as groups, codes, matrix algebra, finite fields, and advanced graph theory.

#### **MATH 391 Topics in Mathematics.**

Semester course; 1-3 credits. May be repeated for credit. A study of selected topics in mathematics. See the Schedule of Classes for specific topics and prerequisites.

#### **MATH 437 Applied Partial Differential Equations.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 and 307. Parabolic (heat), hyperbolic (wave), and elliptic (steady-state) partial differential equations are studied. Solution techniques are demonstrated, including separation of variables and integral transforms. Practical problems and applications are emphasized.

#### **MATH 490 Mathematical Expositions.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: ENGL 200 and six credits in mathematics courses at the 300 level or above. The course is designed to help students attain proficiency in expository mathematical writing, which requires the efficient and effective use of mathematics and the English language.

#### **MATH 492 Independent Study.**

Semester course; variable; 2, 3, 4 credits per semester. Maximum four credits per semester; maximum total of six credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

#### **MATH 493 Mathematical Sciences Internship.**

Semester course; the equivalent of at least 15 work hours per week for a 15-week semester. 3 credits. Mathematical sciences majors only with junior or senior standing. Admission by permission from the department chair. Through placement in a position in business, industry, government, or the university, the student will serve as an intern in order to obtain a broader knowledge of the mathematical sciences and their applications.

#### **MATH 501 Introduction to Abstract Algebra.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 211 and 310 (or their equivalents). An introduction to groups, rings, and fields from an axiomatic point of view. Coset decomposition and basic morphisms.

#### **MATH 505 Modern Geometry.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 211 and (MATH 307 or MATH 310). Topics in

Euclidean, projective, and non-Euclidean geometries from a modern viewpoint.

#### **MATH 507-508 Analysis I-II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MATH 211, 307, and 310 or permission of instructor. Theoretical aspects of calculus, sequences, limits, continuity, infinite series, series of functions, integration, differential geometry.

#### **MATH 509-510 General Topology I-II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MATH 211 and MATH 307. Foundations and fundamental concepts of point-set topology. Topological spaces, convergence, connected sets, compactness, product spaces, quotient spaces, function spaces, separation properties, metrization theorems, mappings, and compactifications.

#### **MATH 511 Applied Linear Algebra.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 310. The algebra of matrices, the theory of finite dimensional vector spaces, and the basic results concerning eigenvectors and eigenvalues, with particular attention to applications.

#### **MATH 512 Complex Analysis for Applications.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 307. The algebra and geometry of complex numbers, analytic functions, integration, series, contour integration, analytic continuation, conformal mapping, with particular attention to applications.

#### **MATH 515 Numerical Analysis I.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 310 or (MATH 201 and MATH 185). Knowledge of a programming language recommended. Solutions of equations, interpolation and approximation, numerical integration, iterative methods for solving linear equations, calculation of eigenvalues and eigenvectors. Selected algorithms may be programmed for solution on computers.

#### **MATH 516 Numerical Analysis II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 515. Numerical solution of initial value problems in ordinary differential equations, two-point boundary value problems. Introduction to numerical techniques for solving partial differential equations. Selected algorithms may be programmed for solution on computers.

#### **MATH 517-518 Methods of Applied Mathematics.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MATH 301 and MATH 307. Vector analysis, matrices, complex analysis, special functions, Legendre and Hermite polynomials. Fourier series, Laplace transforms, integral equations, partial differential equations, boundary-value and initial-value problems.

#### **MATH 520 Game Theory and Linear Programming.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 310. The mathematical basis of game theory and linear programming. Matrix games, linear inequalities and convexity, the mini-max theorems in linear programming, computational methods, and applications.

#### **MATH 521 Introduction to Algebraic Number Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 501. Introduction to algebraic numbers and algebraic number fields with emphasis on quadratic and cyclotomic fields. Units, primes, unique factorization.

#### **MATH 523 Discrete Event Simulation.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 212 and MATH 309 or their equivalents, or permission of instructor. An introduction to the theory and practice of discrete event simulation. Topics include random variable generation, model development and validation, variance reduction techniques, and statistical analysis of output. Applications will be taken from areas such as queueing theory and manufacturing systems. A high-level simulation language will be utilized.

#### **MATH 525 Introduction to Combinatorial Mathematics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 211, 310, or permission of instructor. Introduction to the problems and methods of solution in the enumeration, existence, and construction of some discrete mathematical structures. Discussion of generating functions, recurrence relations, Ramsey's theorem, matching theory, combinatorial designs, Latin squares, and linear coding theory.

#### **MATH 527-528 Mathematical Foundations of Operations Research.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: CMSC 201 or 255, MATH 310. (MATH 309 is prerequisite for MATH 528 and STAT 503 is strongly recommended for MATH 528). Introduction to the mathematical foundations of deterministic and stochastic operations research, including the simplex method for linear programming, nonlinear optimization, dynamic programming, and some stochastic models. Real world applications will be discussed throughout.

#### **MATH 530 The History of Mathematics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: 17 credits at the 200 level or above in mathematical sciences or permission of instructor. Surveys major trends in the development of mathematics from ancient times through the 19th century and considers the cultural and social contexts of mathematical activity. Either MATH 530 or MATH 531 (but not both) may be applied to the master's degree in mathematical sciences or the M.S. degree in computer science. Both MATH 530 and MATH 531 may be applied to the M.Ed. degree in mathematics education.

#### **MATH 531 Expositions in Modern Mathematics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Six credits at the 400 level or above in mathematical sciences. Studies descriptively several major ideas relevant to present-day mathematics, such as the advent of pure abstraction, difficulties in the logical foundations of mathematics, the impact of mathematics and statistics in the 20th century, and the computer revolution. Either MATH 530 or MATH 531 (but not both) may be applied to the master's degree in mathematical sciences or the M.S. degree in computer science. Both MATH 530 and MATH 531 may be applied to the M.Ed. degree in mathematics education.

#### **MATH 591 Topics in Mathematics.**

Semester course; 1-3 credits. May be repeated for credit with different topics. Prerequisite: Permission of the instructor. Open to qualified undergraduates. A study of selected topics in mathematical sciences. See the Schedule of Classes for specific topics and prerequisites.

### **Courses in statistics (STAT)**

#### **STAT 208 Statistical Thinking.**

Semester course; 2 lecture hours and 1.5 laboratory hours. 3 credits. Prerequisite: MATH 131, MATH 141, or MATH 151, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Not open to mathematical sciences or computer science majors. An exploration of the use of statistics in the world around us through in-depth case studies. Emphasis is on understanding statistical studies, charts, tables and graphs frequently seen in various media sources. Laboratories involve learning activities centered on case studies.

#### **STAT 210 Basic Practice of Statistics.**

Semester course; 2 lecture hours and 1.5 laboratory hours. 3 credits. Prerequisite: MATH 131, MATH 141, MATH 151, or satisfactory score on the VCU Mathematics Placement Test within the one-year period immediately preceding the beginning of the course. An exception to this policy is made in the case in which the stated alternative prerequisite course has been completed at VCU. Designed for students seeking a B.S. degree who will likely take another quantitative reasoning course for which statistics may be a prerequisite. Not open to mathematical sciences or computer science majors. Topics include examining distributions, examining relationships, producing data, sampling distributions and probability, introduction to inference.

#### **STAT 212 Concepts of Statistics.**

Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. Prerequisite: MATH 200 and 211. An introduction to the nature of statistical thinking and the application of abstract systems to the resolution of nonabstract problems. Probability models for stochastic events. Parametric representations. Estimation, testing hypotheses and interval estimation with application to classical models. Laboratories include activity based learning and computer usage. A core course for mathematical sciences.

#### **STAT 214 Applications of Statistics.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: STAT 210. A study of the nature and application of statistical methods including analysis of variance, regression, and correlation. Special topics include distribution free methods in various statistical problems. Psychology majors see PSYC 214.

#### **STAT 291 Topics in Statistics.**

Semester course; 1-3 lecture hours. 1-3 credits. A study of selected topics in statistics. Specific topics may fulfill general education requirements. See the Schedule of Classes for specific topics and prerequisites.

**STAT 321 Introduction to Statistical Computing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 212, CMSC 201 or CMSC 255, and MATH 200, or their equivalents. An overview of topics central to the applications of computers in statistical practice: data storage and retrieval, data modification and file handling, use of statistical software (SAS, SPSS, BMDP, etc.), statistical algorithms, random number generation, and applications.

**STAT 391 Topics in Statistics.**

Semester course; 1-3 lecture hours. 1-3 credits. A study of selected topics in statistics. See the Schedule of Classes for specific topics and prerequisites.

**STAT 404 Introduction to Statistical Inference.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Both STAT 212 and MATH 309, or permission of instructor. Framework for statistical inference. Point and interval estimation of population parameters. Hypothesis testing concepts, power functions, Neyman-Pearson lemma, and likelihood ratio tests. Elementary decision theory concepts.

**STAT 492 Independent Study.**

Semester course; variable; 2, 3, 4 credits per semester. Maximum four credits per semester; maximum total of six credits. Generally open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. The student must submit a proposal for investigating some area or problem not contained in the regular curriculum. The results of the student's study will be presented in a report.

**STAT 503 Introduction to Stochastic Processes.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 307 and 309. A continuation of topics given in MATH 309. An elementary introduction to stochastic processes and their applications, including Markov chains and Poisson processes.

**STAT 513-514/BIOS 513-514 Mathematical Statistics I-II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MATH 307. Probability, random variables and their properties, distributions, moment generating functions, limit theorems, estimators and their properties; Neyman-Pearson and likelihood ratio criteria for testing hypotheses.

**STAT 523/BIOS 523 Nonparametric Statistical Methods.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Any two courses of statistics or permission of instructor. Estimation and hypothesis testing when the form of the underlying distribution is unknown. One-, two-, and k-sample problems. Tests of randomness, Kolmogorov-Smirnov tests, analysis of contingency tables, and coefficients of association.

**STAT 533 Applied Linear Regression.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Any two semesters of statistics and one semester of calculus. An introduction to the concepts and methods of regression analysis, including simple linear regression and correlation, multiple regression and correlation. Application of the multiple regression model to the analysis of variance.

**STAT 541 Applied Statistics for Engineers and Scientists.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200-201 or equivalent and operational knowledge of MS-DOS. An introduction to applied statistics intended primarily for graduate students in Mathematical Sciences and the Commonwealth Graduate Engineering Program. The fundamental ideas of the collection and display of information, descriptive statistics and exploratory data analysis, elementary probability theory, frequency distributions, and sampling are covered. Other topics include tests of hypothesis and confidence intervals for one or two sample problems; ANOVA, principles of one-factor experimental designs including block designs and Latin squares, fixed and random effects, multiple comparisons; correlation and linear regression analysis; control charts; contingency tables and goodness of fit.

**STAT 543/BIOS 543/PMCH 543 Statistical Methods I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Graduate standing, or one course in statistics and permission of instructor. Basic concepts and techniques of statistical methods, including: the collection and display of information, data analysis, and statistical measures; variation, sampling, and sampling distributions; point estimation, confidence intervals, and tests of hypotheses for one and two sample problems; principles of one-factor experimental design, one-way analysis of variance, and multiple comparisons; correlation and simple linear regression analysis; contingency tables and tests for goodness of fit. Students may not receive degree credit for both STAT 541 and STAT 543. STAT 543 is not applicable toward the M.S. degree in mathematical sciences or the M.S. degree in computer science.

**STAT 544/BIOS 544 Statistical Methods II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 541 or STAT 543, or equivalent. Introductory treatment of the design of experiments and the statistical analysis of experimental data based on analysis of variance (ANOVA) and multiple-regression problems will be covered. Includes the use of a statistical software package for data analysis.

**STAT 549 Statistical Quality Control.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 212 and MATH 309 or their equivalents, or permission of instructor. Methods of statistical quality control, with an emphasis on the probabilistic and statistical foundations used in designing and evaluating the techniques. Includes variables and attributes control charts, CUSUM charts, process capability analysis, design of experiments, and acceptance sampling.

**STAT 591 Topics in Statistics.**

Semester course; 3 lecture hours. 3 credits. May be repeated for credit. Prerequisite: permission of the instructor. Course open to qualified undergraduates. Selected topics in statistics.

**Department of Military Science**

The military science curriculum teaches the principles of management and leadership as a foundation for civilian and military careers. Graduates of this program are eligible for appointments as commissioned officers in the U.S. Army, the U.S. Army Reserve or Army National Guard.

**Scholarships**

Two- and three-year Army ROTC scholarships are awarded competitively, based strictly on merit, to the most outstanding students who apply. Academic abilities and extracurricular achievements are factors considered in the selection. Army ROTC scholarships pay for in-state tuition and fees, books (\$225 per semester) and \$200 per month (\$2,000 per school year) for living expenses.

**The Four-year Program**

The traditional Four-year Program is divided into two parts.

In the first two years, the Basic Course covers subjects like military history, traditions and organizations, and national defense. There will be a heavy emphasis on leadership development. There is no commitment for the first two years, if students don't have an ROTC scholarship.

Upon successful completion of the Basic Course, students will be eligible to compete for entrance into the Advanced Course. During the Advanced Course, the curriculum consists of instruction and practice in management, tactics, ethics, professionalism and continued leadership development.

During the four years, all ROTC textbooks, uniforms and essential materials will be furnished at no cost. Also, if selected for the advanced course, students will receive an allowance of \$1,500 each year. Also, if selected for advance course, students will receive an allowance of \$2,000 each year.

During the summer between junior and senior years, students will attend Advanced Camp, a training session that provides a hands-on experience for the U.S. Army, and practice in everything learned, especially leadership. Advanced Camp lasts five weeks with pay, travel and equipment provided.

## The Two-year Program

If the first two years of ROTC are missed, or students transfer from a junior or community college, a commission may be obtained through the Two-year Program.

In this program students attend the ROTC Basic Camp, Camp Challenge, for five weeks during the summer. Upon completion of Camp Challenge, students are eligible for the Advanced Course.

## Simultaneous Membership Program (SMP)

This program allows students to become members of the Army National Guard or the Army Reserve while enrolled in Army ROTC.

Advanced ROTC SMP students are paid for their guard/reserve training plus they receive the ROTC allowance of \$2,000 for each of their two years in the Advanced Course.

## ROTC for Veterans

If students are veterans, military experience could fulfill the necessary requirements for the ROTC Basic Course. Veterans may enroll directly in the Advanced Course. In addition to any financial assistance received from ROTC, veterans are still qualified to receive any and all VEAP/GI Bill/Army College Fund benefits to which they are entitled.

## Upper-level credit limitation for College of Humanities and Sciences students

For students in the College of Humanities and Sciences, only three of the eight required 300-level Military Science credits can be applied to the university's 45 upper-level credit requirements.

## Courses in military science (MILS)

### MILS 101 Basic Military Science.

Semester course; 2 lecture hours. 2 credits. Study of the United States Defense Department and the organization and structure of the Army.

### MILS 102 Basic Military Science.

Semester course; 2 lecture hours. 2 credits. Examines leadership doctrine, and their tactics and operations; physical fitness; briefing and writing skills; life-saving techniques; drill and ceremony; basic rifle marksmanship; rappelling; and a field leadership training exercise.

### MILS 201 Basic Military Science.

Semester course; 2 lecture hours. 2 credits. Examines professional ethics and their relationship to military leadership and operations, decision making; briefing and writing skills; life saving techniques; drill and ceremony; basic rifle marksmanship; rappelling; and executing a field leadership reaction course.

### MILS 202 Basic Military Science.

Semester course; 2 lecture hours. 2 credits. Prerequisites: MILS 201 or permission of the instructor. Examines individual soldier skills and movement techniques; Army doctrine; squad-level tactics; rifle marksmanship; land navigation; physical fitness training; water survival; and requires participation in a one day field training exercise.

### MILS 203 Basic Military Science.

0-6 credits. Optional ROTC Basic Camp. Five weeks of training at Fort Knox, Ky. Travel pay and salary stipend provided through the military science department. Student not obligated to any military service. Basic Camp graduates are eligible to enroll in advanced military sciences courses.

### MILS 301-302 Advanced Military Science.

Continuous course; 2 lecture and 1-1/2 laboratory hours. 2-2 credits. Prerequisites: Successful completion of three basic military science courses or MILS 203 Basic Military Science for six credits. An approved military history course (preferably HIST 350) is a prerequisite for commissioning as an officer and should be taken prior to beginning the advanced course. For College of Humanities and Science majors, only three of the eight 300-level military science credits may be used in fulfillment of the 45 upper-level credit requirement for graduation. Management principles and leadership; instructional methods; organization and function of Army branches; theory and dynamics of unit operations and exercise of command.

### MILS 303-304 Advanced Military Science.

Continuous course; 2 lecture and 1 laboratory hour. 2-2 credits. Prerequisites: Successful completion of three basic military science courses or MILS 203 Basic Military Science for six credits. An approved military history course (preferably HIST 350) is a prerequisite for commissioning as an officer and should be taken prior to beginning the advanced course. For College of Humanities and Science majors, only three of the eight 300-level military science credits may be used in fulfillment of the 45 upper-level credit requirement for graduation. Staff organization and procedures, orders and operations, training management, logistics, military law, and the exercise of command.

### MILS 306 Military Science.

0 credits. Prerequisite: MILS 302 and successful completion of three basic military science courses or MILS 203 Basic Military Science for six credits. An approved military history course (preferably HIST 350) is a prerequisite for commissioning as an officer and should be taken prior to beginning the advanced course. For College of Humanities and Science majors, only three of the eight 300-level military science credits may be used in fulfillment of the 45 upper-level credit requirement for graduation. ROTC Advanced Camp. The ROTC camp summer practicum is five weeks long. Individual and group experience for application of leadership training.

Exposure to leadership situations that require decisions made under physical and mental stress conditions.

## Department of Philosophy and Religious Studies

### Anthony Ellis

Professor of Philosophy and Director of Philosophy (1990)  
B.D. 1978 McGill University  
M.A. 1981 and Ph.D. 1984 University of Pittsburgh

### Clifford W. Edwards

Professor of Religious Studies and  
Director of Religious Studies (1975)  
B.A. 1954 Drew University  
M.Div. 1958 Garrett Theological Seminary  
Ph.D. 1964 Northwestern University

- Coleman, Earle J. (1971) Associate Professor of Philosophy  
A.B. 1965 Illinois College  
M.A. 1969 and Ph.D. 1971 University of Hawaii
- Merricks, Trenton D. (1994) Assistant Professor of Philosophy  
B.A. 1989 Ohio State University  
M.A. 1992 Brown University  
Ph.D. 1994 Notre Dame University
- Mills, Eugene (1991) Associate Professor of Philosophy  
B.A. 1980 and M.A. 1985 University of Virginia  
Ph.D. 1990 University of California, Berkeley
- Redmon Jr., Robert B. (1975) Associate Professor of Philosophy  
B.S. 1961 North Carolina State University  
M.A. 1966 and Ph.D. 1969 University of North Carolina, Chapel Hill
- Spiro, Jack D. (1984) Affiliate Professor of Religious Studies and Director, Judaic Studies  
B.A. 1954 Tulane University  
M.A. 1958 Hebrew Union College  
Ed.D. 1979 University of Virginia
- Vallentyne, Peter (1988) Associate Professor  
B.A. 1978 McGill University  
M.A. 1981 and Ph.D. 1984 University of Pittsburgh
- Wadud, Amina (1992) Assistant Professor of Religious Studies  
B.S. 1975 University of Pennsylvania  
M.A. 1982 and Ph.D. 1988 University of Michigan
- Wood, Mark (1997) Assistant Professor of Religious Studies and African-American Studies  
B.A. 1982 and M.A. 1984 California State University, Chico  
M.Phil. 1989 and Ph.D. 1994 Syracuse University

### Emeriti faculty

- Hall Jr., Thomas O., Professor Emeritus of Religious Studies  
A.B. Hampden-Sydney College  
B.D., Th.M. and Th.D. Southwestern Baptist Theological Seminary
- Lindsey Jr., James E. (1970) Assistant Professor Emeritus of Religious Studies  
B.S. University of Richmond  
B.D., Th.M. and Th.D. Union Theological Seminary
- Pratt, Glenn R., Associate Professor Emeritus of Religious Studies  
A.B. Union College  
B.D. and Th.M. Princeton Theological Seminary  
S.T.D. Temple University

The Department of Philosophy and Religious Studies offers a bachelor of arts in philosophy and a bachelor of arts in religious studies — each a distinct undergraduate program.

Philosophy aims at a deeper understanding of matters that should most concern the human race. Philosophical questions crop up in science, religion, art, morality, politics, medicine and in everyday life. Students enrolled in philosophy are encouraged to think seriously about fundamental issues in all these domains and to formulate coherent and well-grounded points of view. Because of its extensive use of critical and analytical reasoning, philosophy equips the student for careers in medicine, law, business and other fields that require careful thought and the clear expression of ideas.

Religious studies focuses on religion as a major aspect of human culture. Students enrolled in religious studies are encouraged to think critically and systematically about religion and its role in culture, and to write clearly and cogently about it. Many students choose to major in religious studies because it provides a broad and flexible degree in the humanities, which might serve as preparation for any other vocation. Some students major in religious studies to prepare for graduate programs in universities, seminaries and professional schools, becoming clergy, chaplains and teachers of religion. Others are preparing for specialized ministries in radio, television, church-related publications, and denominational boards and agencies. An increasing demand exists for public school teachers certified to teach religious studies.

Additionally, the department offers elective courses for students in other programs, as well as for those majoring in philosophy or religious studies.

### Degree requirements

#### Bachelor of arts in philosophy.

The bachelor of arts curriculum in philosophy requires a minimum of 120 credits, with at least 30 of those credits in philosophy. Fifteen of these credits must be selected from upper-level philosophy courses.

Majors in philosophy must fulfill the requirements of either the Regular Concentration or the Ethics and Public Policy Concentration. Majors wishing to go to graduate school in philosophy are advised to choose the regular concentration. Majors whose main interests in

philosophy are ethics, political philosophy, philosophy of law, or public policy (and who may wish to pursue graduate work in law, political science, economics, and related areas) will probably want to choose the Ethics and Public Policy Concentration.

**Regular concentration:** Students are required to take:

- 1) PHIL 103 Ancient and Medieval Philosophy and PHIL 104 Modern Western Philosophy;
- 2) one of PHIL 211/212/213/214 (introductory ethics courses);
- 3) PHIL 222 Logic;
- 4) three of the following with at least one course from each of group (a) and group (b):
  - a) PHIL 320 Philosophy of Law; PHIL 327 Ethical Theory; or PHIL 335 Social and Political Philosophy
  - b) PHIL 301 Mind and Reality; PHIL 302 Reason and Knowledge; PHIL 303 Philosophy of Language; and
  - c) PHIL 391 Topics in Philosophy;
- 5) PHIL 490 Seminar in Philosophy

**Ethics and public policy concentration:** Students are required to take:

- 1) one of PHIL 101 Introduction to Philosophy; PHIL 103 Ancient Medieval Philosophy, or PHIL 104 Modern Western Philosophy;
- 2) one of PHIL 211/212/213/214 (introductory ethics courses);
- 3) one of PHIL 221 Critical Thinking or PHIL 222 Logic;
- 4) one of PHIL 301 Mind and Reality, PHIL 302 Reason and Knowledge, or PHIL 303 Philosophy of Language;
- 5) three of PHIL 320 Philosophy of Law, PHIL 327 Ethical Theory, PHIL 335 Social and Political Philosophy, or PHIL 490 Seminar in Philosophy; and
- 6) two of the following courses, which for this concentration will be accepted within the required 30 credits of the program: MRBL 350 Tort Law, CRJS 324 Courts and Judicial Process, CRJS 355 Foundations of Criminal Justice Practice, ECON 301 Microeconomic Theory, ECON 302 Macroeconomic Theory, ECON 318/HIST 340 Origins and Development of Capitalism, HIST 338 History of Socialism, HIST 369-370 American Constitutional and Legal Development, HIST 333/ECON 419 History of Economic Thought, POLI 310 Public Policy, POLI 314 U.S. Constitutional Law, POLI 315 U.S. Judicial Policy-Making, SOCY 302 Contemporary Social Problems, SOCY 430 Politics, Power, and Ideology

Students also must fulfill the general education requirements of the College of Humanities and Sciences for the bachelor of arts degree and undergraduate requirements.

**Bachelor of arts in religious studies.** The bachelor of arts curriculum in religious studies requires a minimum of 120 credits, with at least 30 of those

credits in religious studies or in courses listed below as acceptable for religious studies credit.

Majors are required to take:

- 1) RELS 101 Introduction to Religious Studies
- 2) six credits from:
  - RELS 301 Introduction to the Old Testament, RELS 302 Introduction to the New Testament, RELS 312 Religions of the World, RELS 317 Islam, RELS 318, 319/HIST 325, 326 History of the Jewish People; RELS 334 Religion in Contemporary America
- 3) six credits from:
  - RELS 311 Religions of the World, RELS 320 Taoism, RELS 408/PHIL Indian Tradition, RELS/PHIL 410 The Chinese Tradition in Philosophy, RELS/PHIL 412 Zen Buddhism
- 4) six credits from:
  - RELS/PHIL 326 Existentialism, RELS/PSYC 333 Psychology and Religious Experience, RELS 350 World Classics of Spirituality, RELS/SOCY 360 Sociology of Religion, RELS/PHIL 430 Philosophy of Religion
- 5) three credits from:
  - RELS 490 Seminar in Religious Studies, RELS 491 Topics in Religious Studies, RELS 492 Independent Study.
- 6) Up to six credits in Hebrew, Greek, Arabic, Japanese or Chinese language courses may be accepted within the required 30 credits of the program if approved by the curriculum committee of the religious studies division. The curriculum committee may approve occasional substitutions within religious studies major requirements should the needs and background of the student warrant such substitutions.

Students must fulfill the general education requirements of the College of Humanities and Sciences and undergraduate requirements for the bachelor of arts degree.

### Minor requirements

**Minor in philosophy.** A philosophy minor consists of 18 credits, with at least nine of those credits in upper-level (300-400) courses and either PHIL 103 Ancient Greek and Medieval Philosophy or PHIL 104 Modern Western Philosophy.

**Minor in philosophy of law.** A minor in philosophy of law consists of 18 credits, to include PHIL 327 Ethical Theory, PHIL 335 Social and Political Philosophy, PHIL 320 Philosophy of Law and one course from the following — PHIL 211 History of Ethics, PHIL 212 Ethics and Applications and PHIL 213 Ethics and Health Care. Philosophy minors must also take two of the following courses: POLI 341, 342 History of Political Thought, POLI 314 U.S. Constitutional

Law, and HIST 369, 370 American Constitutional and Legal Development.

**Minor in religious studies.** The minor in religious studies consists of 18 credits in religious studies, with at least nine of those credits in upper-level courses.

### Minor in Judaic studies

#### Jack D. Spiro

Affiliate Professor of Religious Studies and Director,  
Judaic Studies (1984)

B.A. 1954 Tulane University

M.A. 1958 Hebrew Union College

Ed.D. 1979 University of Virginia

A minor in Judaic studies consists of 18 credits chosen from the following: RELS 301 Introduction to the Old Testament, RELS 304 Introduction to Judaism, RELS 305 Hebrew Prophets, RELS 335 The American Jewish Experience, RELS 407 Modern Jewish Thought, HIST 324 The Holocaust, HIST 325, 326/ RELS 318, 319 History of the Jewish People and other courses which may be developed with approval of the director.

### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in philosophy. A full description of this program appears in Part XX of this bulletin.

### Courses in philosophy (PHIL)

#### PHIL 101 Introduction to Philosophy.

Semester course; 3 lecture hours. 3 credits. An introduction to some of the main branches of philosophy. Some of the issues that might be addressed are: What is knowledge? Is reason or experience the basis for all knowledge? Can we have knowledge of the past, or of the future? What is Truth? Does God Exist? Is there a mental realm separate from the material realm? Are the laws of nature deterministic? Do we have free will? What makes an action morally permissible? What is the proper role of the State in regulating our lives? This course is directed primarily at first and second year students.

#### PHIL 103 Ancient Greek and Medieval Western Philosophy.

Semester courses; 3 lecture hours. 3 credits. A survey of Western philosophy from the ancient Greeks (e.g., Socrates, Plato, and Aristotle) through the medieval period (e.g., Augustine and St. Thomas Aquinas).

#### PHIL 104 Modern Western Philosophy.

Semester course; 3 lecture hours. 3 credits. A survey of Western Philosophy from the Renaissance to the 19th century (e.g., Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Hegel and Marx).

#### PHIL 211 History of Ethics.

Semester course; 3 lecture hours. 3 credits. Corequisite: ENGL 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics and their application to fundamental moral questions, as illustrated by the ethical systems of such historically important Western philosophers as Plato, Aristotle, Augustine, Hume, Mill and Kant.

#### PHIL 212 Ethics and Applications.

Semester course; 3 lecture hours. 3 credits. Credit may be received for only one of PHI 212, 213 or 214. Corequisite: ENGL 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in different areas. Such problems as abortion, the welfare of animals, world hunger, pornography, capital punishment, nuclear defense, sexual behavior, environmental ethics, and reverse discrimination may be used as illustrations.

#### PHIL 213 Ethics and Health Care.

Semester course; 3 lecture hours. 3 credits. Credit may be received for only one of PHI 212, 213, or 214. Corequisite: ENGL 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in health care. The following issues may be used as illustrations: abortion, euthanasia and the right to die, human experimentation, treating mental illness, genetic technologies, the concepts of health and disease, and the funding of health care.

#### PHIL 214 Ethics and Business.

Semester course; 3 lecture hours. 3 credits. Credit may be received for only one of PHI 212, 213, or 214. Corequisite: ENGL 200 or equivalent. A philosophical investigation of the main concepts and theories of ethics, with applications to fundamental moral questions as they arise in business. The following issues arise in affirmative action, investment in unethical companies or countries, product safety, whistle blowing and advertising.

#### PHIL 221 Critical Thinking.

Semester course; 3 lecture hours. 3 credits. An introduction to inductive and deductive reasoning, with emphasis on common errors and fallacies.

#### PHIL 222 Logic.

Semester course; 3 lecture hours. 3 credits. An evaluation of deductive arguments utilizing the methods of symbolic logic.

#### PHIL 291 Topics in Philosophy.

Semester course; variable; 1-4 credits. Prerequisite: As specified in the Schedule of Classes or written permission of instructor. An introductory study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the Schedule of Classes for specific topic to be offered each semester.

#### PHIL 301 Mind and Reality.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Nine credits in philosophy including PHIL 221 or PHIL 222 and one of PHIL 101, 103, or 104 or permission of instructor. An examination of central metaphysical issues, for example,

the mind-body problem, free will, causality, action, realism, and the problems of universals.

#### PHIL 302 Reason and Knowledge.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Nine credits in philosophy including PHIL 221 or PHIL 222 and one of PHIL 101, 103, or 104 or permission of instructor. An examination of central epistemological issues, for example, the problem of justification, empirical knowledge, perception, rationality and truth.

#### PHIL 303 Philosophy of Language.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Nine credits in philosophy including PHIL 222 and six additional credits, at least three of which must be from PHIL 101, 103, or 104, or permission of the instructor. An examination of central issues in the philosophy of language; for example, the nature of meaning and reference, reductionism, properties of languages, and the character of artificial symbols systems.

#### PHIL 320 Philosophy of Law.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Nine credits in philosophy, which must include PHIL 221 or PHIL 222, and one of PHIL 211, 212, 213, 214 or permission of instructor. A critical examination of the nature of law and criminal justice in the light of important human values. The following topics will be considered: the nature of law and legal reasoning, the legal enforcement of morality, and such controversies as punishment versus rehabilitation, and the right to due process versus the need for public safety.

#### PHIL 326/RELS 326 Existentialism.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of PHIL 221 and PHIL 222) or permission of instructor. An examination of the nature of truth, freedom, responsibility, individuality, and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber and Marcel.

#### PHIL 327 Ethical Theory.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Nine credits in philosophy, which must include either PHIL 221 or PHIL 222, and one of PHIL 211, 212, 213, 214 or permission of instructor. A study of the problems of philosophical ethics, including relativism, egoism, utilitarianism, intrinsic value, and the meaning and justification of ethical principles. Both historical and contemporary thinkers will be considered.

#### PHIL 331 Philosophy of Science.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits of philosophy and six credits of natural sciences courses. An examination of the bases of scientific inquiry in both the natural and social sciences; including a study of such topics as hypothesis formation and testing, and the nature of scientific laws, theories, and explanations.

#### PHIL 335 Social and Political Philosophy.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Nine credits in philosophy, which must include either PHIL 221 or PHIL 222, and one of PHIL 211, 212, 213, 214 or permission of instructor. A critical examination of political



power and of the relationship between the individual and his society. Possible topics include: anarchism and the justification of having a state at all; political views about what sort of state is justified (e.g., conservatism, liberalism, communism, feminism, Marxism); private vs. collective property; market vs. planned economies; democracy vs. totalitarianism; and civil disobedience and revolution.

**PHIL 360 Studies in the History of Philosophy:** \_\_\_\_\_.

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of nine credits.

Prerequisites: Nine credits in philosophy, which must include either PHIL 221 or PHIL 222. A study of one or more periods or trends in the history of philosophy, such as ancient Greek philosophy, medieval Western philosophy, rationalism or empiricism.

**PHIL 391 Topics in Philosophy.**

Semester course; variable; 1-4 credits. Prerequisite: As specified in the Schedule of Classes or permission of instructor. A study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See the Schedule of Classes for specific topic to be offered each semester.

**PHIL 408/RELS 408 Indian Tradition.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: At least six credits in philosophy or religious studies courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism, and contemporary development.

**PHIL 410/RELS 410 The Chinese Tradition in Philosophy.**

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty, and of neo-Confucianism. The systems of thought are examined in the light of their social, political, and religious impact on China, Korea and Japan.

**PHIL 412/RELS 412 Zen Buddhism.**

Semester course; 3 lecture hours. 3 credits. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present day Zen theory and practice in Japan and in Western countries.

**PHIL 421 Aesthetics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of PHIL 221 and PHIL 222) or permission of instructor. A critical survey of philosophies of art from antiquity to the twentieth century. Topics include: the nature of art, creativity, aesthetic experience, and aesthetic judgments.

**PHIL 430/RELS 430 Philosophy of Religion.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of PHIL 221 and PHIL 222) or permission of instructor. A critical analysis of such topics as the concept of God, arguments for the existence of God, the problem of

evil, the concept of faith, religious language, and the conceptual problems posed by the plurality of religions.

**PHIL 440/RELS 440 Mysticism.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: One course in philosophy or religious studies. A critical analysis of the varieties of mysticism in world religions. Arguments for and against mysticism will be emphasized. Mysticism will be related to art, psychology, science, philosophy, theology and magic.

**PHIL 490 Seminar in Philosophy.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: One of PHIL 301, 302, 303, 320, 327, 335 or permission of instructor in exceptional cases. Research and analysis of selected philosophical topic in a seminar setting.

**PHIL 492 Independent Study.**

Semester course; variable credit. Maximum of six credits per semester; maximum total of twelve credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. An independent study course to allow interested majors in philosophy to do research, under the direction of a professor qualified in that field, in an area of major interest.

**PHIL 496 Senior Research Project.**

Semester course; 1-4 credits. Prerequisites: Senior status; two of PHIL 301, 302, 303, 327, 335, 391; and written approval by faculty supervisor. An individual research project to develop a polished journal-length research paper. This course is intended primarily for students who wish to develop a dossier paper for submission to a philosophy graduate program.

**PHIL 591 Topics in Philosophy.**

Semester course; variable; 1-4 credits. Prerequisite: Written permission of instructor or graduate standing. A graduate level, in-department study of an individual philosopher, a particular philosophical problem or a narrowly defined period or school. See Schedule of Classes for specific topic to be offered each semester.

**Courses in religious studies (RELS)**

**RELS 101 Introduction to Religious Studies.**

Semester course; 3 lecture hours. 3 credits. This course examines the phenomenon of religion and religious experience. Through a phenomenological approach definitions and descriptions of the major features of the religious experience and of religious establishments, including concepts of the sacred, the numinous, religious language, texts, symbols, rituals and myths are reviewed. In addition, the social, political and spiritual dimensions of religion in human culture will be investigated.

**RELS 250 Death: Myth and Reality.**

Semester course; 3 lecture hours. 3 credits. A study of

intellectual and emotional responses to death and dying with emphasis upon their role in the development of religious thought and practice. Special attention will be paid to the death theme in literature, funeral practices, and beliefs concerning the afterlife in selected world religions.

**RELS 291 Topics in Religious Studies.**

Semester course; variable hours. 1-3 credits. May be repeated with different topics for a maximum of six credits. Prerequisite: Permission of instructor. Introductory level study of selected ideas, institutions, movements, time periods and/or thinkers. See Schedule of Classes for specific topic to be offered each semester.

**RELS 301 Introduction to the Old Testament.**

Semester course; 3 lecture hours. 3 credits. A survey of the Old Testament from its beginning through the post-Exile period. Emphasis given to the literary and historical development of the text.

**RELS 302 Introduction to the New Testament.**

Semester course; 3 lecture hours. 3 credits. A survey of the New Testament with particular emphasis given to the historical development of the Canon.

**RELS 303 Intertestamental Literature and Thought.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RELS 301 or 302. The period between the Old and New Testaments as seen through the literature of the era, with emphasis on the writings of the Apocrypha, Pseudepigrapha, and Josephus.

**RELS 304 Introduction to Judaism.**

Semester course; 3 lecture hours. 3 credits. A general survey of the dynamics and characteristic patterns of Jewish civilization encompassing history, practices, and beliefs.

**RELS 305 Hebrew Prophets.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RELS 301. A survey of the literature and history of Israel as seen through the work of the writing prophets. Emphasis will be placed on the second part of the Hebrew Canon and the Book of Daniel.

**RELS 307/AFAM 307 Black Religion.**

Semester course; 3 lecture hours. 3 credits. An analysis of the role of religion in the lives of blacks with an emphasis on African religions and philosophies, the black church in America, and the roles of the various faiths, sects, and cults.

**RELS 308/HIST 307 The High Middle Ages.**

Semester course; 3 lecture hours. 3 credits. A detailed historical analysis of the Gregorian Revolution, the Crusades, the 12th century Renaissance, the Thomistic World, and the death of medieval civilization.

**RELS 309/HIST 309 The Reformation.**

Semester course; 3 lecture hours. 3 credits. A careful and intensive inquiry into the spiritual and material forces and people involved in the reformation of Christendom in 16th century Europe.

**RELS 311, 312 Religions of the World.**

Semester course; 3 lecture hours. 3, 3 credits. An investigation of the historical, cultural, and theological foundations and development of major world religions. First semester: Hinduism, Buddhism, Confucianism, Taoism, and Shinto. Second semester: Zoroastrianism, Judaism, Christianity, and Islam.

**RELS 313 Life and Literature of Paul.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RELS 302. A survey of the life and literature of Paul as given in Acts and the Epistles, involving special consideration of Paul's contribution to the expansion of Christianity.

**RELS 314 Jesus in the New Testament Tradition.**

Semester course; 3 lecture hours. 3 credits. A study of the Christ of faith and the Jesus of history as presented in New Testament literature and as interpreted in the works of selected scholars from the Church fathers to the present.

**RELS 315, 316/HIST 301, 302 The Ancient Near East.**

Semester course; 3 lecture hours. 3, 3 credits. A study of the ancient Near Eastern civilizations of Mesopotamia, Egypt, Anatolia, and Syria-Palestine, from the preliterate period to that of the Archaemenid Empire of the Persians. First semester: preliterate period to the end of Kassite rule in Babylonia (c.-1160 B.C.). Second semester: the rise and fall of the great Neo-Assyrian, Neo-Babylonian, Hebrew, and Persian Empires (c.-311 B.C.).

**RELS 317 Islam.**

Semester course; 3 lecture hours. 3 credits. A study of the emergence of Islam in Arabia in the seventh century and its subsequent developments, including a look at the Qur'an (the holy book), the Prophetic traditions, the concept of God, as well as mysticism (sufism) and law (shari'ah) as well as an overview of ritual practices, fundamental beliefs, theological principles, and current issues in Islam and international relationship.

**RELS 318, 319/HIST 325, 326 History of the Jewish People.**

Semester courses; 3 lecture hours. 3, 3 credits. A study of the Jewish people from the destruction of the Second Temple in A.D. 70 to the present. First semester: Judea in Roman times, the Diaspora in Islam and in Europe, social and cultural trends, and the impact of the Emancipation. Second semester: the rise of the American Jewish community, the impact of modernism and growth of Reform, the beginnings and growth of Zionism, restoration in Palestine, the Holocaust, the creation of Israel, and the relations of Israel and World Jewry.

**RELS 320 Taoism.**

Semester course; 3 lecture hours. 3 credits. A study of one of the most fundamental and influential philosophies of life in Chinese culture, focusing on the theory and practice of the basic principles of Taoism as formulated by the legendary Lao Tzu and further developed by Chuang Tzu.

**RELS 326/PHIL 326 Existentialism.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of logic) or permission

of instructor. An examination of the nature of truth, freedom, responsibility, individuality, and interpersonal relations as found in some principal writings of Kierkegaard, Nietzsche, Jaspers, Sartre, Heidegger, Camus, Buber and Marcel.

**RELS 327/HIST 327 History of Christianity.**

Semester course; 3 lecture hours. 3 credits. An historical and theological examination of Christianity from its origin to the present. Emphasis will be upon an understanding of leading events, ideas, movements, and persons in their historical settings.

**RELS 333/PSYC 333 Psychology and Religious Experience.**

Semester course; 3 lecture hours. 3 credits. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health, and human values.

**RELS 334 Religion in Contemporary America.**

Semester course; 3 lecture hours. 3 credits. This course studies the history, literature, belief patterns and unique traits of religion in the United States. The evolution of religion and religious sentiment in a modern pluralistic, democratic society, including the varieties of religious experiences in contemporary America will be reviewed.

**RELS 335 The American Jewish Experience.**

Semester course; 3 lecture hours. 3 credits. The religious, social, and cultural structure of American Jewry from the colonial era to the present. Central themes examined are the social and religious characteristics of the American Jewish community, the tension between traditional Jewish values and the demands of the American environment, imported versus indigenous ideologies, regional and denominational variations.

**RELS 340 Global Ethics and the World's Religions.**

Semester course; 3 lecture hours. 3 credits. A critical survey of ethical concepts and issues in the thought and practice of major religious traditions. Comparison of ethical perspectives on selected themes and attention to cooperative efforts towards a global ethic.

**RELS 350 World Classics of Spirituality.**

Semester course; 3 lecture hours. 3 credits. A critical reading of selected works from among the spiritual classics of Judaism, Christianity, Islam, Hinduism, Taoism, and other religious traditions.

**RELS 360/SOCY 360 Sociology of Religion.**

Semester course; 3 lecture hours. 3 credits. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population.

**RELS 361/ENGL 361 The Bible as Literature.**

Semester course; 3 lecture hours. 3 credits. Literary aspects

of the Bible will be considered. Also attention will be given to the history of the English Bible.

**RELS 362 Shakespeare and Religion.**

Semester course; 3 lecture hours. 3 credits. An examination of the religious ideas in selected plays by William Shakespeare and their relevance to contemporary religious thought and experience. Topics include the nature of God, the meaning of life, the problem of evil, moral authority, and the question of immortality as found in Shakespeare's plays.

**RELS 407 Modern Jewish Thought.**

Semester course; 3 lecture hours. 3 credits. A study of the writings of the leading Jewish thinkers of the 19th and 20th centuries. Special reference will be made to the issues arising from the encounter of Judaism with the modern world: the nature of revelation and the authority of the Torah, the nature of God, the impact of the Holocaust, the meaning of redemption, and the significance of the state of Israel.

**RELS 408/PHIL 408 Indian Tradition.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: At least six credits from philosophy or religious studies courses. A systematic analysis of the major theories of Indian religious and philosophical thought: Vedas, Upanishads, Gita, Charvaka, Jainism, Buddhism, the six systems of Hinduism, and contemporary developments.

**RELS 410/PHIL 410 The Chinese Tradition in Philosophy.**

Semester course; 3 lecture hours. 3 credits. A study of the development of Confucianism, of alternative ways of thought prior to the fall of the Han Dynasty, and of neo-Confucianism. The systems of thought are examined in the light of their social, political, and religious impact on China, Korea, and Japan.

**RELS 412/PHIL 412 Zen Buddhism.**

Semester course; 3 lecture hours. 3 credits. A study of Zen Buddhism, including backgrounds in Indian philosophy and practice, development in China and Korea, and present day Zen theory and practice in Japan and in Western countries.

**RELS 425/ANTH 425 Religion, Magic, and Witchcraft.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo, and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society.

**RELS 430/PHIL 430 Philosophy of Religion.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three credits in philosophy (exclusive of PHIL 211 and PHIL 212) or permission of instructor. An introduction to the major problems and questions of religion and reason. Special reference will be made to the nature of God, the nature of man, the problem of evil, the source of good, immortality, and the basis of authority.

**RELS 431/MHIS 431 Hymnology.**

Semester course; 3 lecture hours. 3 credits. Offered alternate years. A study of hymns and hymn tunes with emphasis on their development, style, and functions.

**RELS 435/MHIS 435 Liturgics.**

Semester course; 3 lecture hours. 3 credits. Offered alternate years. A study of the forms of public worship emphasizing the orders in current usage. The planning of weekly and special services.

**RELS 490 Seminar in Religious Studies.**

Semester course; 3 lecture hours. 3 credits. Maximum of six credits. Prerequisite: 12 hours in religious studies courses. Research methods and bibliography in the field of religious studies; application of techniques and resources on research topics with classroom guidance and critique.

**RELS 491 Topics in Religious Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for maximum of six credits. Prerequisite: Written permission of instructor. An in-depth study of selected ideas or concepts, religious thinkers, or significant movements in the field of religion. See the Schedule of Classes for specific topic to be offered each semester.

**RELS 492 Independent Study.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. An independent study course to allow interested students in religious studies to do research in an area of major interest under the direction of a professor qualified in that field.

## Department of Physics

**Robert H. Gowdy**

Associate Professor and Department Chair (1979)  
B.S. 1963 Worcester Polytechnic Institute  
M.S. 1964 and Ph.D. 1968 Yale University

Baski, Alison A.\* (1996) Assistant Professor of Physics and Electrical Engineering

B.S. 1987 University of Colorado  
M.S. 1990 and Ph.D. 1991 Stanford University

Bishop, Marilyn F. (1986) Associate Professor

B.A. 1971, M.A. 1973 and Ph.D. 1976 University of California, Irvine

Carlisle, John A.\* (1996) Assistant Professor of Physics and Electrical Engineering

B.S. 1986 and M.S. 1988 East Texas State University  
Ph.D. 1993 University of Illinois

Jena, Purusottam (1980) Professor

B.S. 1964 and M.S. 1966 Utkal University  
Ph.D. 1970 University of California, Riverside

Khanna, Shiv N. (1984) Professor

B.S. 1970, M.S. 1972 and Ph.D. 1976 University of Delhi, India

Niculescu, Vasile A. (1978) Associate Professor

B.S. 1963 and M.S. 1964 University of Cluj, Romania  
Ph.D. 1971 University of Bucharest, Romania

Rao, Bijan K. (1984) Professor

B.S. 1961 and M.S. 1964 Utkal University, India  
Ph.D. 1971 University of California, Riverside

**Emeriti faculty**

Satterthwaite, Cameron B., Professor Emeritus

B.A. College of Wooster  
Ph.D. University of Pittsburgh

Smith, Elske v.P., Professor Emerita

B.S., M.S. and Ph.D. Radcliffe College

\* Joint appointment

The Department of Physics offers the bachelor of science in physics and the accelerated bachelor of science and master of science in physics program.

The curriculum in physics prepares students for technical careers in physics or in an allied area; for careers in engineering, through either the double major in physics and engineering or the pre-engineering program; and for the teaching of physics in secondary schools. The curriculum also prepares students for graduate studies in physics or in a related area, and for graduate studies of a profession in fields such as business, medical science, environmental science, law or science writing.

Physics majors interested in teaching careers in elementary, middle, secondary or special education can enter the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in physics and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

Students interested in preparing for studies in engineering should refer to the School of Engineering.

The department also offers required and elective courses for students in other programs along with students majoring in physics.

**Master of science in physics/applied physics.** For information about this program see the Graduate Bulletin.

**Degree requirements****Bachelor of science in physics.**

The bachelor of science curriculum in physics requires a minimum of 120 credits, including 53 credits in physics and mathematics (39 credits in physics

and 14 credits in mathematics or 36 credits in physics and 17 credits in mathematics), as detailed in the course lists.

To determine the biology course to fulfill the general education natural sciences requirement, students should consult with their adviser in the college's advising center or their physics adviser. CHEM 101-102, 101L, 102L General Chemistry and Laboratories are highly recommended for all physics majors.

Along with the general education requirements of the College of Humanities and Sciences and the undergraduate requirements, students must take required courses and fulfill specific requirements for the degree as follows:

Required physics courses	Credits
PHYS 207 University Physics I	5
PHYS 208 University Physics II	5
PHYS 301 Classical Mechanics I	3
PHYS 320 Modern Physics	3
PHYS 320L Modern Physics Laboratory	1
PHYS 340 Statistical Mechanics and Thermodynamics	3
PHYS 376 Electromagnetism	3
PHYS 380 Quantum Physics I	3
PHYS 450 Senior Physics Laboratory	3
PHYS 490 Seminar in Conceptual Physics	1
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<b>Required mathematics courses</b>	
MATH 200 Calculus with Analytic Geometry I	4
MATH 201 Calculus with Analytic Geometry II	4
MATH 301 Differential Equations	3
MATH 307 Multivariate Calculus	3
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**Elective physics and mathematics courses 9**

(with a minimum of six PHYS credits)

PHYS 302 Classical Mechanics II (3)  
PHYS 331 Electronics and Instrumentation for Scientists I (3)  
PHYS 397 Directed Study (3)  
PHYS 407 Mechanics of Solid Materials (3)  
PHYS 420 Quantum Physics II (3)  
PHYS 422 Optics (3)  
PHYS 432 Electronics and Instrumentation for Scientists II (3)  
PHYS 440 Introduction to Condensed Matter Physics (3)  
PHYS 491 Topics in Physics (3)  
PHYS 492 Independent Study (3)  
PHYS 571 Theoretical Mechanics (3)  
PHYS 576 Electromagnetic Theory (3)  
PHYS 580 Quantum Mechanics (3)  
PHYS 591 Topics in Physics (3)  
MATH 437 Applied Partial Differential Equations (3)

MATH 511 Applied Linear Algebra (3)  
 MATH 512 Complex Analysis for Applications (3)  
 MATH 515 Numerical Analysis I (3)  
 MATH 516 Numerical Analysis II (3)  
 MATH 517 Methods of Applied Mathematics (3)  
 MATH 518 Methods of Applied Mathematics (3)

#### Suggested course sequence for bachelor of science in physics

Freshman year (GenEd = General Education)	credits
PHYS 207 University Physics I	5
MATH 200 Calculus with Analytic Geometry I	4
MATH 201 Calculus with Analytic Geometry II	4
CHEM 101, 101L General Chemistry and Laboratory	5
CHEM 102, 102L General Chemistry and Laboratory	5
ENGL 101 Composition and Rhetoric I (Level I GenEd)	3
Level II general education requirements	4
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#### Sophomore year

PHYS 208 University Physics II	5
PHYS 320 Modern Physics	3
PHYS 320L Modern Physics Laboratory	1
PHYS 301 Classical Mechanics I	3
MATH 301 Differential Equations	3
MATH 307 Multivariate Calculus	3
BIOL 101 Life Science (Level II GenEd)	3
ENGL 200 Composition and Rhetoric II (Level I GenEd)	3
Level II general education requirements	6
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#### Junior year

PHYS 340 Statistical Mechanics and Thermodynamics	3
PHYS 376 Electromagnetism	3
PHYS 380 Quantum Physics I	3
Physics/Math Elective	3
Writing Intensive course (Level I GenEd)	3
Level II general education requirements	12
Electives	3
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#### Senior year

PHYS 450 Senior Physics Laboratory	3
PHYS 490 Seminar in Conceptual Physics	1
Physics/mathematics electives	6
Level II general education requirements	13
Electives	7
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Those students intending to pursue graduate studies in physics should take PHYS 302, 420, 440, 571, 576 and/or 580. Those interested in experimental physics should also take one or more credits in PHYS 397 or 492.

#### Double major (B.S.) in engineering and physics

A detailed description of this program can be found in the School of Engineering section of this bulletin.

#### Minor in physics

A minor in physics consists of 20 credits made up of PHYS 207, 208, PHYS 320, PHYS 320L and six credits of physics electives that are applicable to the physics major. Engineering courses that are listed as acceptable substitutes in the physics/engineering double major, described in the School of Engineering section of this bulletin, also are acceptable substitutes in the minor.

#### Accelerated B.S./M.S. Physics Program

Students enrolled in the Physics bachelor of science Program may elect to take graduate courses that may count toward the master of science degree. Up to six hours of graduate credit may be earned without any special provisions: however, to offer more than six credits of pre-admission graduate credits toward the master of science degree, the student must apply for admission to the Accelerated bachelor of science/master of science Program through the Department of Physics Graduate Admissions Committee in the junior year, indicating (1) a curriculum plan for completing the physics bachelor of science degree within two years or its part-time equivalency and (2) which graduate courses the student intends to offer toward the physics master of science degree. Those applying for this accelerated program should have a "B" average or better. Admission to the accelerated program does not imply admission to the graduate program. Application for graduate admission must be made when a student applies for the bachelor of science degree.

#### Courses in physics (PHYS)

##### PHYS 101 Foundations of Physics.

Semester course; 3 lecture hours. 3 credits. Offered each semester. For non-science majors. Introduction to the fundamental ideas of physics. The course covers selected topics in mechanics, heat, optics, electricity and magnetism, and modern physics. Not applicable toward the physics major. An optional laboratory may be taken with this course. See PHYS L101.

##### PHYS 101L Foundations of Physics Laboratory.

Semester course; 2 laboratory hours. 1 credit. Corequisite: PHYS 101. An optional laboratory consisting of experiments and activities correlated with PHYS 101.

##### PHYS 103 Elementary Astronomy.

Semester course; 3 lecture hours. 3 credits. A descriptive approach to astronomy dealing with basic features of our solar system, our galaxy, and the universe. Not applicable toward physics major requirements. An optional laboratory may be taken with this course. See PHYS L103.

##### PHYS 103L Elementary Astronomy Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: PHYS 103. An optional laboratory course consisting of experiments and activities related to PHYS 103.

##### PHYS 107 Wonders of Technology.

Semester course; 5 lecture/laboratory/recitation hours. 4 credits. Introduction to physics concepts involved in everyday technological applications. The course covers selected topics in mechanics, heat, optics, electricity, and magnetism, and modern physics by depicting their role in common devices. The laboratory focuses on applications of physics principles to everyday real-life situations. Not applicable toward the physics major.

##### PHYS 201-202 General Physics.

Continuous course; 3 lecture and 3 laboratory hours. 4-4 credits. Prerequisite: MATH 151. Designed primarily for life-science majors. First semester: basic concepts of motion, waves, and heat. Second semester: basic concepts of electricity, magnetism, light, and modern physics. Not applicable toward physics major requirement.

##### PHYS 207 University Physics I.

Continuous course; 3 lecture, 1 recitation and 3 laboratory hours. 5 credits. Corequisite: MATH 200. A vector-and calculus-based introduction to the fundamental concepts of mechanics, heat and wave motion.

##### PHYS 208 University Physics II.

Continuous course; 3 lecture, 1 recitation and 3 laboratory hours. 5 credits. Prerequisite: PHYS 207. Corequisite: MATH 201. A vector- and calculus-based introduction to the fundamentals of electricity, magnetism, and optics.

##### PHYS 291 Topics in Physical Science.

Semester course; 1-3 lecture or laboratory hours. Variable (1-3) credits per semester. A study of a selected topic in physics, astronomy, geology, meteorology, or oceanography. Not applicable toward physics major requirements. See the Schedule of Classes for specific topic(s) and possible prerequisites.

##### PHYS 301 Classical Mechanics I.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 208 and MATH 301. Corequisite: MATH 307. Review of vector calculus. Newtonian mechanics: single particle, oscillations, motion under central forces, dynamics of a systems of particles.

##### PHYS 302 Classical Mechanics II.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 301 and MATH 307. Motion in noninertial frames,

dynamics of rigid bodies, coupled oscillators, continuous systems, wave equations in one dimension.

#### **PHYS 315/ENVS 315 Energy and the Environment.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior or senior standing. A study of society's demands for energy, how it is currently being met, the environmental consequences thereof, and some discussion of alternatives. Open to non-physics majors; not applicable to the physics major.

#### **PHYS 320 Modern Physics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 208 and MATH 301. Corequisite: MATH 307. Foundations of modern physics including special relativity, thermal radiation and quantization, wave-particle duality of radiation and matter. Schrodinger equation. Introduction to atomic, nuclear and particle physics. Molecular structure and spectra. A continuation of PHYS 208.

#### **PHYS 320L Modern Physics Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: PHYS 320. Experimental work correlated with PHYS 320.

#### **PHYS 331 Electronics and Instrumentation for Scientists I.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PHYS 208 or permission of instructor. Simple AC and DC circuit. Passive and active circuit elements including semiconductor devices, discrete and integrated linear circuits.

#### **PHYS 340 Statistical Mechanics and Thermodynamics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 307. Microscopic theory of temperature, heat and entropy, kinetic theory, multicomponent systems, quantum statistics. Mathematical relationships of thermodynamics.

#### **PHYS 376 Electromagnetism.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHYS 301 and MATH 307. Electrostatics, magnetism, and electromagnetic properties of matter, Maxwell's equations, electromagnetic waves, boundary conditions, polarization.

#### **PHYS 380 Quantum Physics I.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 320 and MATH 307 or permission of instructor. Brief introduction to the correspondence between classical and quantum mechanics. Schrodinger wave equation, operator methods in quantum mechanics, angular momentum and conservation laws, solution to harmonic oscillator and the hydrogen atom, magnetic dipole moment and spin.

#### **PHYS 391 Topics in Physics.**

Semester course; 1-3 lecture hours. Variable; 1-3 credits per semester. Maximum total of six credits. In-depth study of a selected topic in physics or physics-related technology, usually at a level requiring only elementary algebra. Not applicable toward physics major requirement. See the Schedule of Classes for specific topic(s), credit, and possible prerequisites.

#### **PHYS 397 Directed Study.**

Semester course; variable; 1-3 credits per semester. Maximum of three credits applicable toward physics major

requirement; maximum total of four credits. Open to nonmajors. Determination of amount of credit and permission of instructor must be obtained before registration for course. Intended to allow nonmajors and majors to examine in detail an area of physics or physics-related technology not otherwise available in upper-level courses. May involve either directed readings or directed laboratory work.

#### **PHYS 407 Mechanics of Solid Materials.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 302 and MATH 307 or permission of instructor. Analysis of stress and strain, constitutive equations, effect of time and temperatures on mechanical behavior and failure of solid materials; introduction to composite materials; emphasis on engineering applications.

#### **PHYS 420 Quantum Physics II.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 380 or permission of instructor. Transition rates, addition of angular momentum, multi-electron atoms-Ground state, X-ray and optical excitations, time independent perturbation theory, relativistic hydrogen atom and the structure of atoms, collision theory, nuclear structure, elementary particles and their symmetries.

#### **PHYS 422 Optics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 376 or permission of instructor. Comprehensive study of propagation of light, including geometrical optics, polarization, interference, diffraction, Fourier optics and quantum optics.

#### **PHYS 432 Electronics and Instrumentation for Scientists II.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PHYS 331 or permission of instructor. Discrete and integrated digital circuits; basic microprocessor architecture, machine and assembly language for input/output configuration; electronic instrumentation for control and measurement.

#### **PHYS 440 Introduction to Condensed Matter Physics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 376 and PHYS 380. Structure and bonding in solids, phonons, free electron Fermi gas, energy bands, semiconductors, Fermi surface and optical properties. Magnetism.

#### **PHYS 450 Senior Physics Laboratory.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Prerequisites: PHYS 320L, PHYS 376, and PHYS 380. Corequisite: PHYS 420. Experiments in atomic, condensed matter, nuclear, particle, and plasma physics. Introduction to instrumentation and first experience in the research laboratory.

#### **PHYS 490 Seminar in Conceptual Physics.**

Semester course; 1 lecture and 1 recitation hour. 1 credit. Prerequisites: PHYS 376 and PHYS 420. Attend weekly physics colloquia, practice oral presentation of ideas and problems. Assessment of general physics background.

#### **PHYS 491 Topics in Physics.**

Semester course; 3 lecture hours. 3 credits. Maximum of three credits applicable toward physics major requirement; maximum total of six credits. An in-depth study of a selected

topic in physics. See the Schedule of Classes for specific topic(s) and prerequisites.

#### **PHYS 492 Independent Study.**

Semester course; variable; 1-3 credits per semester. Maximum of three credits applicable toward physics major requirement; maximum total of eight credits. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. Independent projects in experimental or theoretical physics.

#### **PHYS 571 Theoretical Mechanics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 301 and MATH 301 or permission of instructor. An introduction to advanced dynamics involving the Lagrangian and Hamiltonian formalisms.

#### **PHYS 576 Electromagnetic Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 376 and MATH 301 or permission of instructor. Maxwell's equations of electromagnetism, vector and scalar potentials, electromagnetic waves, and radiation theory.

#### **PHYS 580 Quantum Mechanics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 380, MATH 307, or permission of instructor. Theoretical quantum descriptions with emphasis upon mathematical techniques. Schrodinger equation, hydrogen atom, eigenfunctions and eigenvalues, angular momentum and spin, and perturbation theory.

#### **PHYS 591 Topics in Physics.**

Semester course; 3 lecture hours. variable; 1-3 credits. Open to graduate students and to undergraduate students with advanced standing. An in-depth study of a selected topic in advanced physics. See the Schedule of Classes for specific topic(s) and additional prerequisites. Applicable toward physics major requirements.

## **Department of Political Science and Public Administration**

### **Nelson Wikstrom**

Professor and Department Chair (1971)  
B.A. 1963 Northeastern University  
M.A. 1965 and Ph.D. 1969 University of Connecticut

### **Janet R. Hutchinson**

Associate Professor and Director, Graduate Public Administration Programs (1993)  
B.S. 1978 University of Maryland  
M.P.A. 1985 American University  
Ph.D. 1992 University of Pittsburgh

Alimard, Amin (1982) Collateral Associate Professor  
B.A. and D.P.A. 1961 University of Southern California  
Banks, Manley Elliott (1987) Associate Professor  
B.A. 1975 Morehouse College  
M.A. 1985 and Ph.D. 1987 University of Texas

Condit, Deirdre M. (1994) Assistant Professor of Political Science and Public Administration and Women's Studies  
B.A. 1982 Idaho State University  
M.A. 1991 and Ph.D. 1995 Rutgers University

Dolan, Julie A. (1998) Assistant Professor  
B.A. 1990 St. Olaf College  
Ph.D. 1997 American University

Drake, W. Avon (1986) Associate Professor  
B.S. 1969 North Carolina A&T University  
M.P.S. 1973 and Ph.D. 1985 Cornell University

Farmer, David J. (1980) Professor  
B.S. London School of Economics and Political Science  
D.P.A. 1980 Nova University  
Ph.D. 1984 University of London  
M.A. 1986 and Ph.D. 1989 University of Virginia

Funk, Carolyn L. (2000) Associate Professor and Director, The Commonwealth Poll, Center for Public Policy  
A.B. 1984 Barnard College, Columbia University  
M.A. 1988 and Ph.D. 1993 University of California, Los Angeles

Hambrick, Ralph S. (1978) Professor  
B.A. 1965 Dartmouth College  
Ph.D. 1971 Syracuse University

Hirsch, Herbert (1981) Professor  
B.A. 1963 Concord College  
M.A. 1965 Villanova University  
Ph.D. 1968 University of Kentucky

Holsworth, Robert (1978) Professor and Director, Center for Public Policy  
B.A. 1972 Seton Hall University  
Ph.D. 1978 University of North Carolina, Chapel Hill

Jackson, M. Njeri\* (1990) Associate Professor of Political Science and Public Administration and Director, African-American Studies Program  
B.A. 1976 Georgia State University  
M.A. 1982 and Ph.D. 1987 Atlanta University

Mustafa, Husain M. (1975) Professor  
L.L.B. University of Baghdad  
M.S. Ohio State University  
Ph.D. 1963 American University

Newmann, William W. (1994) Assistant Professor  
B.A. 1983 University of Pennsylvania  
M.A. 1985 Drew University

Twigg, Judyth L. (1992) Assistant Professor  
B.S. 1984 Carnegie Mellon University  
M.A. 1986 University of Pittsburgh  
Ph.D. 1994 Massachusetts Institute of Technology

Wooldridge, Blue E. (1987) Associate Professor  
B.S. Berea College  
M.G.A. 1968 University of Pennsylvania  
M.P.A. 1973 and D.P.A. 1993 University of Southern California

#### Emeriti faculty

Belloni, Frank P., Associate Professor Emeritus  
B.A. University of California at Riverside  
M.A. University of Iowa  
Ph.D. University of California at Los Angeles

Fairholm, Gilbert W., Associate Professor Emeritus  
B.S. Brigham Young University  
M.G.A. 1960 University of Pennsylvania  
D.P.A. 1970 State University of New York

Heiss, F. William, Professor Emeritus  
B.S. University of Denver  
M.A.P.A. and Ph.D. University of Colorado

Henry, Laurin L., Professor Emeritus  
B.A. DePauw University  
M.A. and Ph.D. University of Chicago

Warmenhoven, Henri J., Associate Professor Emeritus  
L.L.B. and L.L.M. University of Leyden  
M.A. and Ph.D. University of Melbourne, Australia

#### Affiliate faculty

Donald C. J. Gehring  
L. Douglas Wilder

Lynn D. Nelson

The political science and public administration curriculum has two central objectives.

It offers the student a broad liberal arts education along with a comprehensive understanding of the nature and the functioning of the political process.

It also provides a sound foundation for graduate study in political science or for careers which require a knowledge of governance and the political process.

The Department of Political Science and Public Administration offers a bachelor of arts in political science.

Additionally, the department offers elective courses in political science for program majors and nonmajors, alike.

#### Degree requirements

**Bachelor of arts in political science.** The bachelor of arts curriculum in political science requires a minimum of 120 credits, with at least 33 of those credits in political science.

Along with the general education requirements of the College of Humanities and Sciences and Academic Campus requirements, the student majoring in political science must take POLI 103 U.S. Government, POLI/INTL 105 International Relations, and POLI 201 Introduction to Politics.

**Political science majors also are required to take one course in each of the following areas:**

1. Comparative politics (POLI 351, 352, 353, 354, 355, 356, 357, 365, and 468);
2. International relations (POLI 361, 362, 363, 364, 365, and 452);
3. Political theory and methodology (POLI 320, 341, 342, 343, 344, and 448);
4. U.S. politics (POLI 301, 302, 303, 306, 308, 310, 311, 314, 315, 316, 318, 321, 322, 323, 329, 331, 409, 420, and 432). Topics courses cannot be used to satisfy these distribution requirements.

Political science majors are **strongly encouraged** to take STAT 210 Basic

Practice of Statistics to fulfill the Humanities and Sciences general education statistics requirement. In addition, political science majors are **strongly encouraged** to complete POLI/SOCY 205 Introduction to Social Science Computing and POLI/SOCY 320 Research Methods in the Social Sciences. With prior approval of the departmental curriculum committee, students can take three credits toward the political science major from courses offered by other departments. Students may count a maximum of six credits of internship and three credits of independent study toward the major.

#### Collateral requirements

In addition to the political science courses required for the bachelor of arts degree, students must complete the study of a foreign language through the intermediate level (202 or 205) by course or placement.

#### Honors in political science

Political science majors can earn honors in political science. To enter this program, students must have an overall 3.0 GPA and at least a 3.3 GPA in political science.

Students must also have completed at least 18 credits in political science before their senior year, with at least 12 of these credits taken at VCU.

Application to this program must be made in the second semester of the junior year.

Students earn the honors status when they complete both POLI 498 Political Science Honors, and POLI 499 Political Science Honors Project, with at least a "B" grade; and graduate with an overall 3.0 GPA and a 3.3 GPA in political science.

#### Minor in political science

A minor in political science consists of 18 credits, including POLI 103 U.S. Government, POLI/INTL 105 International Relations, POLI 201 Introduction to Politics, and at least nine credits in upper-level (300-400) political science courses. These upper-level courses must be selected in consultation with a political science adviser. POLI 492 Independent Study and POLI/URSP 493 Urban Government Internship, POLI 494 Political Science Internship cannot be

used to fulfill these nine upper-level credits.

### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in political science. A full description of the program appears in Part XX of this bulletin.

### Concentration in Public Affairs and Administration

Since students majoring in political science or in urban studies cannot minor in their respective major area, the Concentration in Public Affairs and Administration is designed to offer them the opportunity for a broad-based public affairs education. Typical subject matter includes public policy issues and processes, relations between federal, state and local governments, organization theory and public budgeting. The concentration can be combined with an internship designed to provide practical experience and exposure to the process of administration.

#### Concentration requirements:

Political science and urban studies majors should take:

- POLI 331 Public Administration
- POLI 432 Bureaucratic Politics
- URSP 413 Policy Implementation
- URSP 322 Urban Finance

### Minor in public affairs and administration

A minor in public affairs and administration is designed for students who wish to prepare for a variety of employment opportunities in government and related fields. It provides an overview of public affairs at the national, state and local levels. Its emphasis is on acquainting students with the political context of public administration, issues of particular importance in the private sector, and the complexity of planning and decision making. By emphasizing both professional skill and analytical thinking, it offers the possibility to develop valuable workplace skills and analytic capabilities that may qualify graduates for professional opportunities with local, state or federal agencies, and an ultimate career in the public sector. A public affairs and administration minor also is solid preparation for graduate study in law, public administration, urban planning, public policy, and political science. Students in the minor may arrange an internship to provide experience and

practical exposure to public affairs and administration.

#### Minor requirements:

The minor consists of 18 upper-level credits. All students must take the following courses:

- POLI 331 Public Administration
- POLI 432 Bureaucratic Politics
- URSP 413 Policy Implementation
- URSP 322 Urban Finance

In addition, two of the following electives are required:

- POLI 310 Public Policy
- POLI 321 Municipal Government and Administration
- POLI 322 State and Local Politics
- POLI 329 Intergovernmental Relations
- POLI 334 Issues in Public Employment
- POLI 425 Public Policy in the States
- URSP 310 Introduction to Public Planning\*
- URSP 541 Urban Public Policy Processes\*
- POLI 494 Internship or URSP 493 Internship (see adviser)

Note: Urban studies students take POLI 321

\* Political science students take URSP 541 or URSP 310

### Courses in political science (POLI)

#### POLI 103 U.S. Government.

Semester course; 3 lecture hours. 3 credits. A study of American national government focusing on its underlying political ideas, constitutional basis, major institutions, and their interaction in the determination of public policy.

#### POLI 105/INTL 105 International Relations.

Semester course; 3 lecture hours. 3 credits. An introductory analysis of interstate relations and world affairs. Attention focuses on theories of international politics, military capabilities and their application, international organizations, global economic trends, domestic sources of state behavior, and other selected issues as appropriate.

#### POLI 201 Introduction to Politics.

Semester course; 3 lecture hours. 3 credits. This course examines the basic concepts involved in the study of politics. Topics include nature of the state, purpose of government, justice, power, etc.

#### POLI 205/SOCY 205 Introduction to Social Science Computing.

Five-week course; 4 lecture/laboratory hours. 1 credit. Required of all sociology and anthropology majors concentrating in sociology. An introduction to the use of SPSS for storage, retrieval and exploration of social science data.

#### POLI 301 U.S. Parties and Elections.

Semester course; 3 lecture hours. 3 credits. An overview of political parties and elections in the U.S. Topics will include the history, organization, and methods of U.S. political parties, presidential nominations and elections; Congressional elections.

#### POLI 302/AFAM 302 Politics of the Civil Rights Movement.

Semester course; 3 lecture hours. 3 credits. The main objectives

of the course are to introduce and examine the personalities and activities of the modern Civil Rights Movement. The course provides the historical background leading up to the peak years of the struggle for racial equality in America.

#### POLI 303 Political Attitudes and Behavior.

Semester course; 3 lecture hours. 3 credits. Study of the political behavior of individual citizens. Topics include public opinion and its measurement; how political attitudes are created and shaped; the role of the news media in influencing political behavior; political participation.

#### POLI 306 The Congress.

Semester course; 3 lecture hours. 3 credits. A study of the behavior of legislators and the structures and processes of legislative decision making in the U.S. Congress. Analysis will include both the internal and external environment of congressional policy making, and an assessment of the impact of congressional policy.

#### POLI 308 U.S. Presidency.

Semester course; 3 lecture hours. 3 credits. A political and institutional study of the chief executive, focusing especially on the presidential personality and relations with Congress, the bureaucracy, the courts, and the shaping of domestic and foreign policy.

#### POLI 310 Public Policy.

Semester course; 3 lecture hours. 3 credits. An analytical survey of policy formulation and implementation in the United States, together with an examination of the impact of policy upon individuals and groups in American society.

#### POLI 311/ENVS 311 Politics of the Environment.

Semester course; 3 lecture hours. 3 credits. An exploration of the current controversy about environmental politics and the issues and crisis it centers on. Special attention will be given to the constitutional, political, and geographical factors in the development of environmental policy and the organized effort to deal with governmental actions and inaction and its impact on policy outcomes.

#### POLI 314 U.S. Constitutional Law.

Semester course; 3 lecture hours. 3 credits. A survey of the development of the Constitution through judicial interpretation. Topics to be covered include an introduction to the operation of the Supreme Court, decisions on federalism, the powers of Congress, the president, and the judiciary and civil rights and civil liberties.

#### POLI 315 U.S. Judicial Policy Making.

Semester course; 3 lecture hours. 3 credits. Prerequisite: POLI 314. A study of theories and models of judicial decision making in the Supreme Court, focusing on judicial structure and procedures, policy-making analysis, political ideology, and judicial activism.

#### POLI 316/WMNS 316 Women and the Law.

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics, and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular

rights of women of color and lesbians, reproductive rights, women criminals, and women in the legal profession.

**POLI 318/AFAM 318/WMNS 318 Politics of Race, Class and Gender.**

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States.

**POLI 320/SOCY 320 Research Methods in the Social Sciences.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: SOCY/POLI 205 or equivalent. Current methods of research in the social sciences.

**POLI 321 Urban Government and Politics.**

Semester course; 3 lecture hours. 3 credits. An examination of urban political power and influence, governance, and public policy. Topics include: power and influence, governmental structures and the political process, public policy, and service delivery.

**POLI 322 State and Local Government and Politics.**

Semester course; 3 lecture hours. 3 credits. An examination of the politics and governance of states and localities. Attention is devoted to political culture, interest groups, political parties, the legislative, executive, and judicial components of state government, along with the structure and political processes of local governments.

**POLI 323 Virginia Government and Politics.**

Semester course; 3 lecture hours. 3 credits. An examination of Virginia state government and politics, with appropriate attention given to political culture, interest groups, political parties, the media, and the legislative, executive, and judicial branches of government.

**POLI 329 Intergovernmental Relations.**

Semester course; 3 lecture hours. 3 credits. An examination of vertical and horizontal intergovernmental relations. Attention will be given to the major variants of federalism. The role of categorical and block grants in programmatic federalism will be assessed. Trends in intergovernmental relations will be advanced.

**POLI 331 Public Administration.**

Semester course; 3 lecture hours. 3 credits. A study of the concepts and practices of public administration in the United States. Particular attention will be given to the administrative procedures and practices of the national government and of the government in Virginia.

**POLI 334 Issues in Public Employment.**

Semester course; 3 lecture hours. 3 credits. An analysis of personnel management in government. Recruitment and selection, job and salary classification, work standards and training, and relations of public personnel to the executive and legislative branches of government will be among the topics to be discussed.

**POLI 341, 342 History of Political Thought.**

Semester courses; 3 lecture hours. 3-3 credits. A survey of

political thought from the time of Plato to the present. First semester: leading political ideas of the ancient and medieval periods. Second semester: modern and contemporary thought.

**POLI 343/AFAM 343 Black Political Thought.**

Semester course; 3 lecture hours. 3 credits. An historical and sociological perspective on the political and social ideas of black thinkers from David Walker to the present.

**POLI 344 Contemporary Political Theory.**

Semester course; 3 lecture hours. 3 credits. This course provides a survey of recent trends in political theory. It examines updates of the major ideological traditions, arguments about the nature of modernity and recent developments in environment, feminist and non-Western thought.

**POLI 351/INTL 351 Governments and Politics of the Middle East.**

Semester course; 3 lecture hours. 3 credits. A comparative analysis of political systems in the Middle East including the study of contemporary aspects of traditionalism, the political nature of transition, the instruments of political modernization, and evolution and revolution in the political process of Middle Eastern states. The course will explore the primary bases of cleavage and conflict and the principal forces that shape the policies and political dynamics of the region.

**POLI 352/INTL 352 European Governments and Politics.**

Semester course; 3 lecture hours. 3 credits. A comparative study of the political systems of selected western and eastern European countries.

**POLI 353/INTL 353 Latin American Governments and Politics.**

Semester course; 3 lecture hours. 3 credits. A survey of politics characteristic of Latin American systems, including democratic reformism, military authoritarianism, and revolutionary socialism. The course also examines the contemporary problems of fledgling democracies as they cope with economic and debt crises and various opposition challenges.

**POLI 354/INTL 354 Politics of the Former Soviet Union.**

Semester course; 3 lecture hours. 3 credits. A study of the origins, institutions, and processes, and disintegration of the Soviet political system, and the ongoing reform efforts during the post-Soviet period. Special emphasis is placed on the politics of the transition to a democratic political system and a market economy. Other topics include nationality issues, social problems, and foreign policy.

**POLI 355/INTL 355 Asian Governments and Politics.**

Semester course; 3 lecture hours. 3 credits. A comparative analysis of the politics and governments of major Asian states, with a focus on Japan, China, and India.

**POLI 356/AFAM 356/INTL 356 Government and Politics of Africa.**

Semester course; 3 lecture hours. 3 credits. This course will introduce the student to the basic outlines of government and politics in Africa. The course will consider such topics as colonialism, elitism and nationalism, and modernization

strategies. Using the comparative approach, the course will primarily focus on West, East and Central Africa.

**POLI 357/AFAM 357/INTL 357 Politics of Southern Africa.**

Semester course; 3 lecture hours. 3 credits. An examination of racial and political developments in the southern tip of Africa. While South Africa will be the primary focus of analysis, other countries in the region, such as Zimbabwe, Angola, and Mozambique, will be studied.

**POLI 358/INTL 358 Comparative Politics.**

Semester course; 3 lecture hours. 3 credits. Comparative study of politics and governments. Introduces concepts and theories used in the study of political systems. Topics include democratization and democratic governance, the role of the state, one-party and military regimes, revolution, and economic and political development.

**POLI 361/INTL 361 Issues in World Politics.**

Semester course; 3 lecture hours. 3 credits. An exploration of several significant issues in world politics. Topics may include peacekeeping and collective security, international economic competitiveness, global environmental politics, as well as selected others. Topics will vary with current events and trends in the international arena.

**POLI 362/INTL 362 International Organizations and Institutions.**

Semester course; 3 lecture hours. 3 credits. A study of the background development structure and operations of organizations and institutions such as the United Nations, the European Community, the Organization of American States.

**POLI 363/INTL 363 U.S. Foreign Policy.**

Semester course; 3 lecture hours. 3 credits. An analytical survey of processes and practices in the formulation of United States foreign policy, including an introduction to the goals, problems of implementation, and current challenges faced by policy makers.

**POLI 364/INTL 364 Vietnam.**

Semester course; 3 lecture hours. 3 credits. An analysis of the complete record of the conflict in Vietnam. The primary focus will be on the period of United States involvement. The course will examine closely how and why the United States became involved in Vietnam and what impact the Vietnam war has had on political institutions and behavior. In particular, the course will examine what impact the period of United States involvement has had upon U.S. foreign policy. The course also will consider additional topics including: public opinion and the war, the relationship between president and Congress in light of the war, and contemporary U.S. politics as a backlash against the political movements of the 1960s.

**POLI 365/INTL 365 International Political Economy.**

3 lecture hours. 3 credits. A survey of both theoretical and current policy issues in international political economy. Theories to be covered include liberalism, mercantilism, Marxism, regionalism, world systems theory, and others. Policy issues include differing styles of capitalism in the



industrialized world, the political economy of development, the politics of international corporate alliances, and others.

#### **POLI 391 Topics in Political Science.**

Semester course; 3 lecture hours. 3 credits. Maximum total of nine credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the Schedule of Classes for specific topics to be offered each semester.

#### **POLI 409 Continuity and Change in American Politics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: POLI 103 or permission of instructor. This course is concerned with the role of cultural, economic, and social variables in shaping American politics and public policy. Particular attention will be devoted to the impact of socioeconomic change upon individual and group behavior, and the structures and processes of American national government.

#### **POLI 420 Seminar in Urban Politics.**

Semester course; 3 lecture hours. 3 credits. Attention will be devoted to concerns bearing on community power and influence, the dynamics of the urban political process, the nature of urban public policy, and metropolitan governmental structure.

#### **POLI 425 Public Policy in the States.**

Semester course; 3 lecture hours. 3 credits. The course focuses primarily upon the policy outcomes of state political systems rather than upon institutional processes. Social, economic, political, and governmental structures and their relationship to state policy are analyzed; means of policy evaluation are considered; and the insights developed are applied to substantive areas of state policy.

#### **POLI 432 Bureaucratic Politics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: POLI 331. An analysis of the nature of bureaucracy and bureaucratic phenomena in American governments; the role and involvement of the bureaucracy in politics and the policy-making process. Primary focus on theories and approaches to understanding the central role of bureaucracy in modern society and its use and abuse of power.

#### **POLI 448 Scope and Method of Political Science.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: POLI 103 and 201, or permission of instructor. A comprehensive and systematic study of the philosophy of political science, various theories seeking to explain political phenomena, and some of the techniques of political analysis.

#### **POLI 452/INTL 452 Seminar in the Politics of Developing Areas.**

Semester course; 3 lecture hours. 3 credits. Analysis of the processes of political and economic development. Includes a study of various challenges facing developing countries, such as economic inequalities, environmental degradation, mass political participation, military coups, revolution, and civil war.

#### **POLI 468/INTL 468 Seminar on Comparative Foreign Policy.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: POLI 201 or permission of instructor. A study of theories,

models, and hypotheses of foreign policy behavior in various types of political systems with emphasis on empirical research and analysis of differences and similarities.

#### **POLI 491 Topics in Political Science.**

Semester course; 3 lecture hours. 3 credits. Maximum total of nine credits in all departmental topics courses may be applied to the major. An intensive survey of a specialized field of political interest. See the Schedule of Classes for specific topics to be offered each semester.

#### **POLI 492 Independent Study.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of six credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in political science. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. An independent study course which allows a political science major or other student who meets the requirement to do research, under the direction of an instructor qualified in that area, in a subject or field of major interest.

#### **POLI 493/URSP 493 Urban Government Internship.**

Semester course; 150 clock hours in a local legislative body or administrative agency. 3 credits. May be repeated once for a maximum of six credits or 300 clock hours. Approval of selection committee required. Under supervision of a faculty committee and a field supervisor, the internship is designed to present opportunities for qualified students to acquire exposure to aspects of public decision-making processes by participation in (1) local legislative bodies of the Richmond metropolitan area; (2) local and regional administrative agencies and commissions; and (3) private organizations that have demonstrated interest in local government and politics.

#### **POLI 494 Political Science Internship.**

Semester course; 3 credits. May be repeated once for a maximum of six credits. Designed to provide the student with an opportunity to relate theory to practice through observation and actual experience in the legislative, executive, or judicial branches of government, or in interest groups or political party organizations.

#### **POLI 498 Political Science Honors.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Admission to the Honors in Political Science Program or permission of the political science honors coordinator. This course will focus primarily on various approaches to the study of politics and will draw together the diverse strands of political science that are the most representative, coherent, and lively in the field. Its purpose is to acquaint the students with various conceptual frameworks for the study of politics or to develop their understanding of the state of the discipline.

#### **POLI 499 Political Science Honors Project.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Successful completion of POLI 498 with a "B" grade or above. This course will entail the planning and execution of a major research project demonstrating a thorough understanding and use of research techniques in political analysis, knowledge of relevant literature, sophisticated writing and research ability under the direction of the honors coordinator.

## **Department of Psychology**

### **Everette L. Worthington**

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M.A. and Ph.D. 1974 University of Illinois, Urbana-Champaign

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B.A. 1981 University of Notre Dame  
M.A. 1985 and Ph.D. 1989 DePaul University  
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B.A. 1979 Davidson College  
M.S. 1982 University of Maryland  
Ph.D. 1988 Pennsylvania State University

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 B.S. 1981 University of Michigan  
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 B.A. 1958 Louisiana State University  
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 M.A. 1976 and Ph.D. 1979 University of South Florida

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 Ph.D. 1992 Virginia Commonwealth University

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 Ph.D. 1986 University of Tennessee

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 M.S.N.E. Massachusetts Institute of Technology  
 M.A. and Ph.D. 1978 University of Missouri

#### Emeriti faculty

Erickson, Marilyn T. (1976) Professor Emerita  
 A.B. 1957 and M.A. 1959 Brown University  
 Ph.D. 1961 University of Washington

Groman, William D., Professor Emeritus  
 B.A. and M.S. University of Miami, Florida  
 Ph.D. Duke University

Kiesler, Donald J., Professor Emeritus  
 A.B. 1958 Bellarmine College  
 Ph.D. 1963 University of Illinois

Strong, Stanley R. (1980) Professor Emeritus  
 B.A. Montana State University  
 Ph.D. 1966 University of Minnesota

Tipton, Robert M., Professor Emeritus  
 B.S. and M.S. Virginia Commonwealth University  
 Ph.D. University of Missouri

The curriculum in psychology reflects the discipline's three major orientations — a science, teaching and incorporating empirical methods; a healing profession; and a philosophy, raising basic questions about the assumptions, values, and ideals of human beings and their societies.

The bachelor of science curriculum gives students a comprehensive appreciation of psychology as a science. Through a core set of requirements the student systematically develops understanding and skill in scientific methods of inquiry — particularly about human behavior. Courses selected from the curriculum's four content areas, as well as some of the core requirements, expose students to the healing and philosophical sides of psychology and provide a broad understanding of the field of psychology. Students who graduate from this program achieve the necessary preparation for graduate study, and possess the professional skills and knowledge for employment within the field.

**Psychology majors interested in teaching careers in early, middle, secondary or special education can enroll in the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in psychology and a master's degree in teaching. For more information about this program administered jointly by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.**

**Master of science and doctor of philosophy in psychology programs.** For information about graduate work in psychology, see the Graduate Bulletin.

#### Degree requirements

Students should carefully review the humanities and sciences general requirements. The bachelor of science curriculum in psychology was developed in the context of these general requirements. It is the student's responsibility to know the specific requirements of both the College of Humanities and Sciences and the Department of Psychology. It is also the student's obligation to plan a meaningful program of study, and to consult regularly with advisers in the Career Information and Advising Center.

**Bachelor of science in psychology.** The bachelor of science curriculum in psychology requires a minimum of 120 credits, with at least 30 of those credits in psychology. However, no more than 36 credits in psychology can be presented for graduation for the bachelor of science degree. This limit does not apply to courses numbered 490 and above.

At least 15 of the 30 required credits must be taken at VCU, and the student must earn a "C" or better in PSYC 101, STAT 210, PSYC 214, and PSYC 317.

The bachelor of science psychology major must take five core courses in the discipline and four additional courses chosen from a selection of offerings in four content areas.

To complete the minimum requirement of 30 credits for the program, students must complete one free elective selected from any of the department's courses, excluding PSYC 201, which may, however, be counted beyond the required 30 credits.

The following five courses constitute the required core in the bachelor of science curriculum:

PSYC 101 Introduction to Psychology  
 PSYC 214 Applications of Statistics  
 PSYC 317 Experimental Methods  
 PSYC 318 Principles of Psychological Tests and Measurement  
 PSYC 451 History and Systems of Psychology

The student must choose one course from each of the following four content areas:

#### Developmental

PSYC 301 Child Psychology or PSYC 304 Life Span Developmental Psychology (both cannot be taken for credit toward a degree)  
 PSYC 302 Psychology of Adolescence  
 PSYC 306 Psychology of Adult Development

#### Social/personality

PSYC 309 Personality

PSYC 321 Social Psychology  
 PSYC 323 Interpersonal Relations  
 PSYC/WMNS 335 Psychology of Women  
 PSYC/SOCY 341 Group Dynamics  
 PSYC 405 Humanistic Psychology

#### **Physiological/learning**

PSYC 401 Physiological Psychology  
 PSYC 406 Perception  
 PSYC 410 Principles of Learning and Cognition

#### **Self-development/applied psychology**

PSYC 303 Personal Adjustment  
 PSYC 308 Stress and its Management  
 PSYC 310 Industrial Psychology  
 PSYC 340 Introduction to the Helping Relationship  
 PSYC 407 Psychology of the Abnormal  
 PSYC 414 Psychology of Women's Health  
 PSYC 426 Child Psychopathology

In addition to the psychology courses required for the bachelor of science in psychology, the student must take the following courses:

STAT 210 Basic Practice of Statistics (required prior to  
 PSYC 214 Applications of Statistics)  
 BIOL 101, 101L Life Science and Life Science Laboratory  
 BIOL 102 Science of Heredity or BIOL/ENVS 103  
 Environmental Science

### **Careers in psychology**

Students choose to major in psychology for many reasons. Most often they select the major for a combination of wanting to help other people and of desiring to learn the scientific principles of behavior. Students in the program expect to receive career counseling and information on graduate and/or professional school training. The department has developed methods to meet these expectations.

PSYC 201 Career Development in Psychology, covers specialty fields within the discipline and the career opportunities available to degree holders. This course also discusses graduate and professional school options open to the graduate of the program.

The Career Information and Advising Center has been established by the department to provide individual and group counseling services for undergraduate majors with career concerns. Specific career and academic information also is available at this center. Students are shown how to choose appropriate electives for bachelor's-level careers in mental health services, personnel, management, corrections, rehabilitation, health services, education and laboratory research.

Faculty advisers specialize in career advising and professional development. The faculty adviser's role is to consult with students about various areas of professional opportunity, explain the role of graduate education, and suggest general areas of study outside of the psychology department that might fit the student's interests and goals.

Faculty adviser assignments are made through the Psychology Career Information and Advising Center.

PSYC 493 Fieldwork: Human Services, and PSYC 494 Research Internship in Psychology, are two of the upper-level electives specifically designed to enhance the psychology major's career pursuits for either employment or graduate-level training. Both of these courses provide opportunities for direct, practical experience with close supervision.

The Department of Psychology offers service learning courses that involve participation in an organized community service experience. Through classroom discussions and written assignments, students relate theories and research presented in class with community experiences. Through service learning courses, students:

- gain an understanding and appreciation of the community and its diverse people,
- explore an area of study or a career option, and
- critically reflect on their values and responsibilities as citizens.

Some service learning courses require a two-semester commitment. In many cases, a service learning course will meet the urban experience general education requirement (consult the Schedule of Classes).

### **Graduate school in psychology**

The Career Information and Advising Center maintains up-to-date information from the American Psychological Association and other resources on admission requirements and programs at a variety of graduate schools.

Students considering graduate school should consult their faculty advisers and the Career Information and Advising Center early in their studies at VCU. Specific courses in psychology are strongly recommended for many graduate programs, so careful and early planning is important.

Referrals to other campus services are made through the center to help the

student with other professional school options and their respective entrance requirements. Those options are pre-law, pre-med, master of social work, master of business administration and others.

### **Honors in psychology**

**Psychology majors in the bachelor of science.** program can earn honors in psychology. Any student is eligible to join the program if he or she declares a major in psychology and meets one of the three following entrance requirements.

Entering freshmen must have combined SAT scores of at least 1250 and rank in the top 15 percent of their graduating high school class. Students transferring to VCU must have a 3.5 cumulative GPA in at least 30 college semester hours of credit and have no more than 60 college semester hours of credit. Continuing VCU students must have a 3.5 cumulative GPA and have taken a minimum of 20, but no more than 60 credits at VCU. Promising students who do not quite meet these requirements can be considered for program membership by writing to the director of the psychology honors program.

Once admitted to the program, the honors student must fulfill three basic program requirements.

First, students must take a minimum of nine credits in psychology courses that are designated as honors sections. PSYC 497, 498, and 499 may not be used to fulfill this requirement.

Next, honors students must enroll for a minimum of three credits in PSYC 494 Research Internship in Psychology, no later than the fall semester of their junior year.

Finally, all students must complete PSYC 497 Honors Seminar, in their junior year, and complete PSYC 498-499 Honors in Psychology, in their senior year.

A student in the program will graduate with honors in psychology if he or she has completed all course requirements with a "B" or better; has maintained a GPA of 3.5, overall and in psychology; and has completed all other requirements for the bachelor of science degree.

### **Minor in psychology**

A minor in psychology consists of 18 credits in psychology, including PSYC 101 Introduction to Psychology; one course from each of the four basic areas: developmental, social/personality, physiological/learning, and self-development/applied

psychology; and one additional course. PSYC 201 Career Development in Psychology cannot be used to meet this requirement. At least nine of the 18 credits must be taken at VCU.

### Minor in substance abuse services

The minor in substance abuse services is for students with career interests in substance abuse treatment and prevention. The primary objectives of the minor are to attract more students into the field of substance abuse services; and provide an organized track for students planning to pursue graduate training in this area. Students who graduate with this minor and a cumulative 3.0 GPA will have priority admission status for the VCU master of science in Rehabilitation Counseling Program. The required courses for this minor are listed below. PSYC 101 Introduction to Psychology, which can be used toward general education requirements, is a prerequisite for the courses in this minor.

PSYC 340 Introduction to the Helping Relationship  
 PSYC 407 Psychology of the Abnormal  
 PSYC 401 Physiological Psychology  
 RHAB 321 Introduction to Substance Abuse  
 RHAB 452 Crisis Intervention with the Substance Abuser  
 PSYC 493 Fieldwork: Human Services (substance abuse treatment section)

Students interested in this minor are interviewed before being accepted into the fieldwork course and must contact the coordinator of this fieldwork section prior to the fall semester of their senior year. Students must complete all required courses before enrolling in the fieldwork course (PSYC 493 substance abuse treatment section) which is offered each spring. In the fall semester prior to PSYC 493, students are required to attend two workshops. The first is a panel presentation of area substance abuse treatment programs. This information helps students decide their placement for the spring semester. The second session focuses on preparing a resume and arranging interviews for possible placements, which are to be finalized by the end of the fall semester. It typically takes a student three to four semesters to complete the sequence of required courses for this minor.

### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in psychology. A full description of the program appears in Part XX of this bulletin.

### Courses in psychology (PSYC)

#### PSYC 101 Introduction to Psychology.

Semester course; 3 lecture and 1 computer-assisted instructional hour. 4 credits. A survey of the basic principles, methods of investigation, and fields of study and application. Includes individualized application of principles and methods in computerized learning activities. A prerequisite for upper-level work in the field of psychology.

#### PSYC 201 Career Development in Psychology.

Semester course; 2 lecture hours. 2 credits. Prerequisite: PSYC 101. Introduction to the discipline of psychology and the career alternatives available in various specialties. Self-assessment, career decision-making skills, educational program planning methods will be covered. Special topics will include graduate/professional school options, opportunities for minority students, and job search strategies for the B.A. or B.S. psychology major.

#### PSYC 214 Applications of Statistics.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PSYC 101 and STAT 210. Frequency distributions, measures of central tendency and variability; sampling, probability, correlation, and significance tests as applied in psychological data.

#### PSYC 301 Child Psychology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study is made of the growth and development of the child until puberty. Childlike is viewed in terms of physical, mental, social, emotional, and educational factors. (PSYC 304 Life Span Developmental Psychology may not also be taken for credit.)

#### PSYC 302 Psychology of Adolescence.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101 and either PSYC 301 or PSYC 304. A study of mental, moral, social, and physical development from puberty to maturity viewed as in child psychology. Designed for secondary school teachers, youth leaders, and professional psychologists.

#### PSYC 303 Personal Adjustment.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Surveys major theories of personality as a basis for studying theory, research, and intervention into areas that require personal adjustment. Such areas include sense of self, stress and coping, work and career, and several varieties of interpersonal relationships. Positive adjustment and growth as well as problems are discussed.

#### PSYC 304 Life Span Developmental Psychology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Reviews the basic concepts and principles of physical, cognitive, and social development at each major

stage of life—prenatal, infancy, toddlerhood, preschool, middle childhood, adolescence, adulthood, and old age. Consideration is given to the study of development at each stage of life and to different theoretical explanations for development. PSYC 301 Child Psychology may not also be taken for credit.

#### PSYC 305/EDUS 305 Educational Psychology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The application of psychological principles to the teaching-learning process with special emphasis on theories of learning and development.

#### PSYC 306 Psychology of Adult Development.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101 and either PSYC 301 or PSYC 304. The life stages and transitions of the young adult, middle age, and young-old phases of the life cycle are considered, following a review of methods of research within life-span development psychology. Topics include the impact of events such as birth of the first child, job relocation, mid-life re-evaluation, and anticipated retirement.

#### PSYC 308 Stress and its Management.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Physiological and psychological aspects of stressors and the stress response. Review of principles, research, and methods of stress management, such as relaxation, self-suggestions, meditation and biofeedback.

#### PSYC 309 Personality.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. The study of the various approaches to understanding human behavior in terms of personality theory. Various theories will be examined for commonality and uniqueness in assumptions, dynamics, and development of personality.

#### PSYC 310 Industrial Psychology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Application of psychological principles and techniques to problems in personnel management and human engineering; recruitment, selection, training, and placement in industry; criteria in testing and test development; morale evaluation and improvement, employee counseling; work-management communications; human engineering in equipment design, quality control, working conditions and safety.

#### PSYC 317 Experimental Methods.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: PSYC 101 and PSYC 214. Introduction to experimental procedures and laboratory techniques in psychology. Demonstrations and experiments in sensation, perception, learning, emotion and motivation.

#### PSYC 318 Principles of Psychological Tests and Measurements.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101 and PSYC 214. Concepts in psychological measurement and a survey of commonly used tests; testing procedures and rationale underlying these tests; tests of intelligence, aptitude, achievement, interest, and personality critically examined,

procedures described for selecting and evaluating specific group tests in these areas.

#### **PSYC 321 Social Psychology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Survey theory and research in social psychology. Topics include interpersonal and social influence processes, attitudes and social cognition, the impact of personality on social behavior, conformity, leadership, and small group behavior.

#### **PSYC 322/AFAM 322 Personality and Behavior of the African-American.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A study of personality factors such as motivation, ego-functioning, and the socialization processes, with special emphasis on living conditions of African-Americans.

#### **PSYC 323 Interpersonal Relations.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Analyzes human relations from various theoretical perspectives. Typical topics include the effects of attraction, friendship, love, and dependency on relationships; the evolution of relationships from initiation through termination. Strategies for increasing effectiveness of communication between individuals are also addressed.

#### **PSYC 333/RELS 333 Psychology and Religious Experience.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Religious belief and experience as viewed by major psychological theorists. How psychological methodology has been used to study religious experience. Topics include personality factors and development, conversion experiences, religious experiences and mental health, and human values.

#### **PSYC 335/WMNS 335 Psychology of Women.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse.

#### **PSYC 340 Introduction to the Helping Relationship.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Overview to the dynamics of communication in a helping relationship. Didactic material includes the principles of empathy, nonverbal behavior, problem solving, crisis intervention, and interview techniques. Basic paraprofessional counselor skills will be demonstrated and practiced through structured exercises.

#### **PSYC 341/SOCY 341 Group Dynamics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership,

and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself.

#### **PSYC 401 Physiological Psychology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Data from the fields of anatomy and physiology are presented, and their implications for psychology are discussed. The central nervous system, internal environment, vision, audition, reflexes, emotion, learning behavior disorders, and their physiological components. Behavior of the human organisms is studied from the biopsychological point of view.

#### **PSYC 404/SOCY 404 Social Psychology of Emotions.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101, SOCY 101. An examination of the social shaping of emotion as well as its function in maintaining the social process. Cross-cultural uniformities and diversity in basic emotions and their expression are addressed as well as selected social psychological theories of emotions.

#### **PSYC 405 Humanistic Psychology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. A critical examination of "third force" psychology, emphasizing person-centered and growth-oriented frameworks for the analysis of behaviors believed unique to humans. The course addresses theory and research on the psychological foundations of consciousness, self-awareness, intentionality, symbol manipulation, and related topics which may define human nature as distinct from that of other species.

#### **PSYC 406 Perception.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Perception of information from sensory systems with concentration on vision and hearing. Research and theories on how we learn and judge color, form, movement, depth, and how we integrate these in object identification.

#### **PSYC 407 Psychology of the Abnormal.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Development of personality is discussed, with emphasis on factors leading to maladjustment. Lectures and reading cover the symptom groups of emotional disorders of both psychological and organic origin. Methods of assessing and treating these disorders are surveyed.

#### **PSYC 410 Principles of Learning and Cognition.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Comprehensive treatment of learning and cognition with emphasis on humans, from behavioral, cognitive, biological, and developmental viewpoints. Topics include conditioning, information processing, memory, sociobiology, and cognitive and moral development.

#### **PSYC 412 Health Psychology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101, PSYC 308 or PSYC 401, or consent of instructor. Application of the principles and techniques of psychology to the field of medicine, to health maintenance, and to illness. The integration of theoretical, research, and applied issues is

emphasized in the analysis of such topics as psychological/behavioral factors contributing to and protecting against physical illness (stress, smoking, exercise), factors relating to treatment and recovery (coping, treatment compliance), psychological problems resulting from illness and injury, and specific techniques and problem areas in health psychology (such as biofeedback, pain management, pediatric psychology, geropsychology, rehabilitation psychology, and lifestyle change.)

#### **PSYC 414/WMNS 414 Psychology of Women's Health.**

Semester course; 3 lecture hours. 3 credits. Overviews the psychological research on women's health. Topics include health behavior change, personality and individual differences, cognitive factors, disease-specific behaviors and interventions.

#### **PSYC 426 Child Psychopathology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101 and either PSYC 301 or PSYC 304. Principal childhood behavioral abnormalities. A review of causes, assessment, and diagnostic methods, and treatment, intervention, and prevention approaches.

#### **PSYC 451 History and Systems of Psychology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101, open to psychology major students of junior or senior standing. The history of psychological ideas and theories emphasizing the origins and interrelationships of the major viewpoints and systems from ancient Greece to the present.

#### **PSYC 491 Topics in Psychology.**

Semester course; 3 lecture hours. 3 credits. Maximum total of six credits in topics courses. Prerequisite: PSYC 101. An in-depth study of selected topics and issues in psychology. See the Schedule of Classes for specific topics to be offered.

#### **PSYC 492 Independent Study.**

Semester course; variable; 1, 2, or 3 credits per semester. Maximum of six credits for all independent study courses. PSYC 492; PSYC 493; PSYC 494 may be repeated for a total of six credits but a maximum of 12 credits total for all three courses. Prerequisite: PSYC 101. Open only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of instructor and department chair must be procured prior to registration for the course. Independent study is defined as student-conceived and initiated readings or research project which is supervised by a psychology faculty member. An oral examination or written, comprehensive paper is required at the end of the semester. PSYC 492, PSYC 493 and PSYC 494 may be repeated for a total of six credits but a maximum of 12 credits total for all three courses is allowed.

#### **PSYC 493 Fieldwork: Human Services.**

Semester course; 3 credits. Prerequisite: Permission of instructor. Students are placed in an agency which will provide supervised work experience in various aspects of helping other people. The setting might be a government or private community agency, or a corporation, depending on the

student's goals. The student works eight hours per week at the placement site, attends several group discussion sessions during the semester, and completes written assignments. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment. PSYC 492, PSYC 493 and PSYC 494 may be repeated for a total of six credits but a maximum of 12 credits total for all three courses is allowed.

#### **PSYC 494 Research Internship in Psychology.**

Semester course; variable; 1, 2, or 3 credits per semester. May be repeated for a maximum of six credits with adviser's approval. PSYC 492; PSYC 493; PSYC 494 may be repeated for a total of six credits but a maximum of 12 credits total for all three courses. Prerequisites: PSYC 101 and permission of faculty research supervisor must be obtained prior to registration. PSYC 214, 317, or permission of supervisor. Students will work on various phases of a research project (design, data collection, data analysis, manuscript writing) under a psychology faculty member's close supervision. This course is designed to enhance the psychology major's career pursuits for either graduate-level training or post-baccalaureate employment. PSYC 492, PSYC 493 and PSYC 494 may be repeated for a total of six credits but a maximum of 12 credits total for all three courses is allowed.

#### **PSYC 497 Honors Seminar.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: PSYC 101 and junior standing and admission to the honors in psychology program. Pre or corequisite: PSYC 317. An introduction to the scientific process, particularly as applied to the field of psychology. Prepares students for future research experience, and surveys current research, opportunities for post-graduate study, and professional development in psychology.

#### **PSYC 498-499 Honors in Psychology.**

Continuous course; 3 lecture hours. 2-3 credits. Prerequisite: PSYC 101 and consent of undergraduate committee of the psychology department. Discussion will include advanced research strategies, related professional issues, and topics determined by the student's interest. Students are required to develop and complete a senior honors thesis which will be the major emphasis of the second semester.

### **Interdisciplinary Degree Program in Science**

#### **Andrew D. Lacatell**

Assistant Director, Center for Environmental Studies (1993)  
B.A. 1993 University of Richmond  
M.I.S. 1995 Virginia Commonwealth University  
M.P.H. 1997 Medical College of Virginia of Virginia Commonwealth University

The interdisciplinary program in science provides students with a broad, yet fundamental, grounding in the sciences. In addition to the spectrum of required mathematics and science courses, students select a concentration from biology, chemistry, general science,

mathematics or environmental studies. The mathematics and general science tracks are particularly suited for students interested in careers in early or middle school science or mathematics education.

The environmental studies track is particularly suited for students who wish to complement their foundation in the traditional sciences with a more global perspective. The environmental studies track includes courses in politics, economics and environmental technology. This track prepares students for careers in the environmental field, consulting, advocacy and private industry. This curriculum also provides the student with a foundation for graduate work in environmental sciences or related fields.

Students completing this curriculum earn a bachelor of science degree in science.

For information concerning the program and advising, contact the program coordinator. Selected faculty in biology, chemistry, environmental studies, mathematical sciences, and physics are the academic advisers for this program.

Bachelor of science in science majors interested in teaching careers in early, middle or special education can enroll in the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in science and a master's degree in teaching. For more information about this program jointly administered by the School of Education and the College of Humanities and Sciences, contact the School of Education's Division of Teacher Education.

### **Degree requirements**

**Bachelor of science in science.** The bachelor of science curriculum in science requires a minimum of 120 credits.

Along with the general education requirements of the undergraduate programs and the College of Humanities and Sciences for a bachelor of science degree, this curriculum requires 32-36 credits in core science and mathematics courses (see chart) and 30-39 credits in one of the following tracks: biology, chemistry, general science, mathematics, or environmental studies. In preparation for the required mathematical sciences courses, all students must take the Mathematics Placement Test.

**Core course requirements.** See chart for beginning core courses in the program.

#### **Choose one of the following five tracks:**

	Credits
<b>Biology track</b>	
BIOL 152 and 152L Introduction to Biological Sciences II and Laboratory	4
BIOL 218 Cell Biology	3
BIOL 310 and 310L Genetics and Laboratory in Genetics	4
BIOL 317 Ecology	3
BIOL 392 Introduction to Research	1
CHEM 102 and 102L General Chemistry and Laboratory	5
GEOG/ENVS 105 and 105L Physical Geology and Laboratory	4
PHYS 202 and 202L General Physics and Laboratory or PHYS 208 and 208L University Physics and Laboratory	4 or 5
PHYS 391 Geologic Fieldwork	1
One upper-level animal and one upper-level plant course, with laboratories	8
	<hr/> 37 or 38
<b>Chemistry track</b>	
BIOL 152 and 152L Introduction to Biological Sciences II and Laboratory	4
BIOL 317 Ecology	3
BIOL 392 Introduction to Research	1
CHEM 102 and 102L General Chemistry and Laboratory II	5
CHEM 301-302 Organic Chemistry	6
CHEM 301L and 302L Organic Chemistry Laboratory I and II	4
CHEM 309 and 309L Quantitative Analysis	4
GEOG/ENVS 105 and 105L Physical Geology and Laboratory	4
PHYS 202 and 202L General Physics and Laboratory or PHYS 208 and 208L University Physics and Laboratory	4 or 5
PHYS 391 Geologic Fieldwork	1
	<hr/> 36 or 37
<b>Environmental studies track</b>	
BIOL 152 and 152L Introduction to Biological Sciences II and Laboratory	4
BIOL 317 Ecology	3
BIOL 332/ENVS 330 Environmental Pollution or BIOL 432 Biology of Polluted Waters	3
CHEM 102 and 102L General Chemistry and Laboratory	5
ECON 325 Environmental Economics	3
ENVS/GEOG 335 and 335L Environmental Geology	4
ENVS 490 Research Seminar in Environmental Studies	3

PHYS 202 and 202L General Physics and Laboratory or PHYS 208 and 208L University Physics and Laboratory	4 or 5	Two additional courses at the 200 level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	6
POLI/ENVS 311 Politics of the Environment	3		
SOCY/POLI 320 Research Methods in the Social Sciences	3		35-38
One additional environmental studies course chosen with adviser's approval	3	<b>Mathematics track</b>	
	38 or 39	CMSC 128 Computer Concepts and Applications or CMSC 255 Structured Programming	3
		CMSC 554 Applications of Computers in Teaching Mathematics	3
		MATH 131 Contemporary Mathematics	3
		MATH 211 Mathematical Structures	3
		MATH 303 Geometry	3
		MATH 310 Linear Algebra	3
		MATH 327 Mathematical Modeling	3
		MATH 351 Applied Abstract Algebra	3
		Two additional courses at the 200 level or higher in mathematics, science, teaching mathematics and/or science with adviser's approval	6
			30
<b>General science track</b>			
BIOL 315/ENVS 314 Man and Environment, BIOL 332/ENVS 330 Environmental Pollution or BIOL 317 Ecology	3		
ENVS/GEOG 401 Meteorology and Climatology	3		
ENVS/GEOG 411 Oceanography	3		
PHYS 103 and 103L Astronomy	4		
GEOG/ENVS 105 and 105L Physical Geology and Laboratory	4		
Second course in of introductory biology, physics and chemistry courses with laboratories	12-15		

### Courses in interdisciplinary science (INSC)

#### INSC 300 Experiencing Science.

Semester course; 5 studio hours. 3 credits. Prerequisites: Four credits in biology, four credits in physical science, three credits in mathematics, and STAT 208 or 210. Study of the methods and processes used by scientists in investigations. Guided, active replication of great discoveries in major scientific disciplines in physical science, life science, and earth science.

#### INSC 301 Investigatory Mathematics and Science.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Four credits in biology, four credits in physical science, three credits in mathematics, and STAT 208 or STAT 210. Students investigate real world science problems, formulate model solutions to the problems, produce project reports, and present their solutions to class. Problems selected from areas including water quality, epidemics and spread of diseases, heat loss and gain, genetics, and drugs in the body.

### Science program core course requirements

Core courses	Biology track	Chemistry track	Environmental studies track	Mathematics track	General science track
<b>Introductory biology</b> (4-5 credits)	BIOL 151 with Laboratory	BIOL 151 with Laboratory	BIOL 151 with Laboratory	BIOL 101, 102, 103* or 151 with Laboratory	BIOL 101, 102, 103 or 151 with Laboratory
<b>Introductory chemistry</b> (4-5 credits)	CHEM 101 with Laboratory	CHEM 101 with Laboratory	CHEM 101 with Laboratory	CHEM 101 or CHEM 110* with Laboratory	CHEM 101 or CHEM 110* with Laboratory
<b>Introductory physics</b> (4-5 credits)	PHYS 201 or 207	PHYS 201 or 207	PHYS 201 or 207	PHYS 101, L101 or 107*, or 201, or 207	PHYS 101, L101 or 107, or 201, or 207
<b>Geography</b> (4 credits)	GEOG 203 or 204 with Laboratory	GEOG 203 or 204 with Laboratory	GEOG 203 or 204 with Laboratory	GEOG 203 or 204 with Laboratory	GEOG 203 or 204 with Laboratory
<b>Science</b> (3 credits)	INSC 300 or ENVS/GEOG 401	INSC 300 or ENVS/GEOG 401	ENVS/GEOG 401	INSC 300	INSC 300
<b>Additional science course</b> (3 credits)	INSC 301 or ENVS/GEOG 411	INSC 301 or ENVS/GEOG 411	ENVS/GEOG 411	INSC 301	INSC 301
<b>Mathematics</b> (by placement or 4 credits)	MATH 151	MATH 151	MATH 151	MATH 151	MATH 151
<b>Additional mathematics course</b> (3-4 credits)	MATH 200 or STAT beyond 210	MATH 200	STAT beyond 210	MATH 200	MATH 200
<b>Statistics</b> (3 credits)	STAT 208 or 210	STAT 208 or 210	STAT 210	STAT 208 or 210	STAT 208 or 210

\* Recommended among options

## Science

For interdisciplinary science courses, see INSC in these listings.

## Social Sciences

### Joseph A. Marolla

Associate Professor and Chair, Department of Sociology and Anthropology and Coordinator, Social Sciences (1975)  
B.A. and M.A. University of Rhode Island  
Ph.D. 1974 University of Denver

Courses in social sciences are offered by a number of academic departments. However, these courses have been grouped together.

## Courses in social science (SOCS)

### SOCS 291 Issues in Social Science.

Semester course; variable; 1-3 credits per semester. Maximum total of six credits. An interdisciplinary course structured around social issues pertinent to today's society. See the Schedule of Classes for particular issues to be covered and the semester credit for which each course will be offered.

### SOCS 303 Marriage and Family Relationships.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. Marriage and the family in contemporary society. Topics discussed will include the effects of masculine and feminine roles on marital and parent-child relationships, how role problems are resolved, sexual adjustments, financial adjustment, family planning, and retirement.

### SOCS 330 The Psychology and Sociology of Death.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101 or SOCY 101. An interdisciplinary study of the encounter with death, death and personality, the organizational processing of death, and demographic regularities of dying. Sociologists and psychologists jointly teach the course.

### SOCS 389 AIDS: Myths and Realities

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Presents students with the fundamentals of infectious disease, immunology and virology as they apply to HIV disease. Students will trace the psychosocial impact HIV pandemic has had on society since the early 1980s, and will explore the future possibilities for those who are HIV infected and/or HIV affected.

### SOCS 340 Human Sexuality.

Semester course; 3 lecture hours. 3 credits. A study of the variety of the forms, sources, and consequences of human sexual behaviors and the attitudes, beliefs, and values associated with them. The data and its analysis are directed to the significance of sex in human experience.

### SOCS 350 The Construction of Culture.

Semester course; 3 lecture hours. 3 credits. An examination, using methods from several disciplines, of the ways in which

human beings construct the shared meanings that constitute culture.

## Department of Sociology and Anthropology

### Joseph A. Marolla

Associate Professor and Department Chair (1975)  
B.A. and M.A. University of Rhode Island  
Ph.D. 1974 University of Denver

### J. Sherwood Williams

Professor and Associate Chair (1971)  
B.A. 1964 California State College, Long Beach  
M.A. 1968 California State College, Los Angeles  
Ph.D. 1972 Washington State University

Bromley, David G. (1983) Professor

A.B. 1963 Colby College  
M.A. 1966 and Ph.D. 1971 Duke University

Creighton-Zollar, Ann (1981) Associate Professor

B.A., M.A. and Ph.D. 1980 University of Illinois, Chicago Circle

Croteau, David R. (1994) Associate Professor

B.A. 1984 Brandeis University  
M.A. 1989 and Ph.D. 1993 Boston College

Forsyth, Donelson R.\*\* (1978) Professor

B.S. 1974 Florida State University  
M.A. 1975 and Ph.D. 1978 University of Florida

Henry, Neil W. (1975) Associate Professor of Sociology and

Anthropology and Mathematical Sciences  
B.A. 1958 Wesleyan University  
M.A. 1960 Dartmouth College  
Ph.D. 1970 Columbia University

Honnold, Julie A. (1974) Associate Professor

B.A. Knox College  
M.A. and Ph.D. 1974 University of Denver

Lyng, Stephan G. (1987) Associate Professor

B.A. 1973, M.A. 1977 and Ph.D. 1982 University of Texas

Mahoney, John S. (1988) Assistant Professor

and Director of Undergraduate Studies  
B.A. 1970, M.A. 1976 and Ph.D. 1983 University of Virginia

Nelson, Lynn D. (1972) Professor

B.A. Abilene Christian College  
M.A. University of Alabama  
Ph.D. 1971 Ohio State University

Palen, J. John (1980) Professor

B.A. 1961 University of Notre Dame  
M.A. 1963 and Ph.D. 1967 University of Wisconsin, Madison

Rankin, Daphne L. (1988) Instructor

B.A. 1976 University of North Carolina  
M.S. 1987 Virginia Commonwealth University

Scully, Diana H. (1976) Professor and Director, Women's Studies Program

B.A. 1970, M.A. 1972 and Ph.D. 1977 University of Illinois, Chicago Circle

Smedley, Audrey Y.\* (1995) Professor of Sociology and

Anthropology and African-American Studies  
B.A. 1954 and M.A. 1957 University of Michigan  
Ph.D. 1967 Victoria University of Manchester

Stasson, Mark F.\*\* (1989) Associate Professor

B.S. 1984 University of Wisconsin  
M.A. 1987 and Ph.D. 1989 University of Illinois  
Turner, Christina B. (1994) Assistant Professor  
B.A. 1982 and M.A. 1984 University of Denver  
M.A. 1987 and Ph.D. 1992 Tulane University

### Emeriti faculty

Diana, Lewis, Professor Emeritus

A.B. Harvard University  
M.A. and Ph.D. University of Pittsburgh

McGrath III, John H., Professor Emeritus

B.A. Albright College  
M.A. and Ph.D. 1967 Rutgers State University

\* Joint appointment

\*\* Affiliate appointment

The bachelor of science curriculum in sociology and anthropology seeks to ensure that each student develops a solid foundation in the basic principles, theories and techniques of analysis in one of the two disciplines. Since students majoring in sociology or anthropology vary in their interests and career goals, the curriculum allows for a great deal of flexibility developing individual courses of study. Students who are interested in pursuing graduate studies in sociology or anthropology will usually take more than the minimum number of upper-level courses. The department provides opportunities for involvement in faculty research through its course offerings, which include independent study, internships and honors research.

Sociology and anthropology majors interested in teaching careers in early, middle, secondary, or special education can enroll in the Extended Teacher Preparation Program that results in the simultaneous awarding of a bachelor's degree in sociology and anthropology and a master's degree in teaching. For more information about this extended program administered jointly by the School of Education and the College of Humanities and Sciences, contact the School of Education's Office of Academic Services.

**Master of Science in Sociology Program.** For information about graduate work in sociology, see the Graduate Bulletin.

## Degree requirements

**Bachelor of science in sociology and anthropology.** The bachelor of science curriculum in sociology and



anthropology requires a minimum of 120 credits, with at least 31 of those credits in sociology and anthropology, 21 of which must be in upper-level (300-400) courses. **ANTH 103 Cultural Anthropology and SOCY 101 General Sociology are required of all majors.** Students can choose to concentrate in either sociology or anthropology.

In fulfilling the mathematical sciences general education requirements of the College of Humanities and Sciences, students seeking a bachelor of science in sociology or anthropology should complete STAT 210 Basic Practice of Statistics. The department recommends that students complete BIOL 102 Science of Heredity or BIOL 103 Environmental Science to complete the biological science part of the General Education natural sciences requirement.

**Sociology concentration.** Students who choose to concentrate in sociology must take at least 15 of the 21 required upper-level credits in sociology courses; the rest may be in anthropology courses. SOCY 205 Introduction to Social Science Computing, SOCY 320 Research Methods in the Social Sciences and SOCY 402 Sociology Theory are required in the sociology concentration. As part of the concentration, students must take one course from three of the following four content areas:

#### **Social organizations and institutions**

SOCY 315 Education and Society  
SOCY/RELS 360 Sociology of Religion  
SOCY 370 Mass Media and Society  
SOCY 405 Family Research  
SOCY 430 Politics, Power and Ideology  
SOCY 436 Work and Management in Modern Society  
SOCY 445 Medical Sociology  
SOCY 470 News Media in a Democratic Society  
SOCY 475 Organizations and Human Behavior

#### **Control, conflict and social change**

SOCY 310 Social Movements and Social Conflict  
SOCY 321 Class, Status, and Power  
SOCY 322 Minority Groups in the United States  
SOCY/WMNS 334 Sociology of Women  
SOCY 352 Social Change  
SOCY 403 Criminology

#### **The relationship of individual and society**

SOCY 340 Self and Society  
SOCY/PSYC 341 Group Dynamics  
SOCY/PSYC 404 Social Psychology of Emotions  
SOCY 434 Sociology of Sport  
SOCY 440 Advanced Social Psychology  
SOCY 446 Sociology of Mental Disorder

#### **Historical and cross-cultural patterns**

ANTH 305 Comparative Society  
SOCY/ANTH/WMNS 304 The Family  
SOCY/AFAM/WMNS 305 Sociology of the Black Family  
SOCY 327 Urban Sociology  
SOCY 328 Russian Society in Transition  
SOCY/WMNS 333 Sociology of Sex and Gender

**Anthropology concentration.** Students who choose to concentrate in anthropology must take at least 15 of the 21 credits in required upper-level anthropology courses; the rest may be in sociology courses. In addition, students must take one course from three of the following four content areas:

#### **Physical/biological anthropology**

ANTH 301 The Evolution of Man and Culture

#### **Linguistics**

ANTH/ENGL/LING 449 Introduction to Linguistics

#### **Archaeology**

ANTH 252 The Archaeology of Richmond  
ANTH 302 Archaeology Method and Theory  
ANTH 375 Field Archaeology  
ANTH 394 Historical Archaeology

#### **Social and cultural anthropology**

ANTH/INTL 305 Comparative Society  
ANTH 315 Anthropological Field Methods and Research Design  
ANTH/INTL 348 South American Ethnography  
ANTH/INTL 349 Contemporary Cultures of Latin America  
ANTH/INTL 350 Peoples and Cultures of the World  
ANTH/INTL 415 Economic Anthropology  
ANTH/AFAM 416 The Origin and Evolution of the Idea of Race  
ANTH 425 Religion, Magic, and Witchcraft  
ANTH 454 Anthropological Theory

#### **Minor requirements — general**

Students majoring in sociology and anthropology cannot minor in sociology or anthropology.

**Minor in anthropology.** A anthropology minor shall consist of 18 credits, including ANTH 103 Cultural Anthropology. At least 12 credits must be taken from upper-level (300-400) anthropology courses. The remaining three credits may be from any sociology or anthropology course.

**Minor in sociology.** A sociology minor shall consist of 18 credits including SOCY 101 General Sociology. At least 12 credits must be upper-level (300-400) sociology courses including SOCY 402 Sociological Theory. The

remaining three credits may be from any sociology or anthropology course.

#### **Honors in sociology and anthropology**

Majors in the Department of Sociology and Anthropology may earn a bachelor of science degree with honors in sociology or honors in anthropology. The Sociology/Anthropology Honors Program is available to outstanding senior majors and involves the preparation of a senior thesis during one of the last two semesters of the baccalaureate degree program. In order to participate in the program, students must meet program entrance requirements, identify a project mentor, and receive approval for a project proposal. Honors will be awarded following acceptance of the thesis by the Honors Program Committee.

**Honors program description.** The Sociology/Anthropology Honors Program is designed to provide outstanding majors with the opportunity to pursue an independent research project under the direction of a faculty mentor. The research is conducted during one of the final two semesters of the undergraduate degree program. The project may involve any recognized sociological/anthropological topic, theory, and method that promises to enhance the honor student's disciplinary perspective, skills, and creativity. The project may involve an extension of work initiated in a course, an entirely new project or a collaborative project with the faculty mentor. If the project is an extension of work initiated in a course or developed collaboratively with the mentor, the independent, separate, substantial development of the topic in the thesis should be evident. The thesis should reflect work of high quality for a senior-level course.

**Honors eligibility criteria and application procedure.** Students majoring in the Department of Sociology and Anthropology, with a concentration in either sociology or anthropology, are eligible to participate in the departmental honors program if they have maintained a 3.0 overall GPA and a 3.3 GPA in the major. Candidates should apply to the Sociology/Anthropology Honors Program Committee. Application materials consist of transcripts documenting the required GPAs, a description of the proposed project, which should not exceed

three typed pages, and the name of the faculty member who has agreed to act as project mentor. Application must be made and project approval received in the semester preceding the one in which the research project will be conducted. The committee will review the application materials, meet with the candidate to discuss the project proposal, and render an admission decision. Once admitted, program participants will enroll in an honors research course. The course may be included in the required hours for the major.

Submit applications to the Sociology/Anthropology Honors Program Committee, Department of Sociology and Anthropology, Virginia Commonwealth University, Richmond, VA 23284-2040. For further information, contact Dr. John Mahoney, Director of Undergraduate Studies.

**Award of honors.** The completed senior thesis will be submitted to the Honors Program Committee following its acceptance by the faculty mentor and confirmation that the candidate has maintained the requisite grade-point averages. Upon submission of the thesis, the student will make an oral presentation to the committee summarizing the research procedures and findings. The committee will then evaluate the thesis for the award of honors. For acceptance, the thesis must be evaluated as deserving of a grade of "A" in the Honors Research Course. Acceptance of the thesis will earn an Honors Program Certificate from the department and notation of the student's standing as an honors graduate on the final grade transcript. Honors students also will receive preferential consideration as applicants to the Sociology Master's Degree Program.

### Undergraduate topics courses

Topics courses in both sociology and anthropology (SOCY 391 and ANTH 391) are an integral part of the program and provide a rare opportunity for the advanced student. Generally these courses are restricted to a small number of students who share specialized interests in a topic which is either too advanced or too limited in its general appeal to justify its inclusion as a standard offering. At least one such seminar is offered each semester and the topics course can be repeated up to

a maximum of 18 credits as long as there is no duplication of the topics.

### Independent study

These courses (SOCY 492 and ANTH 492) are designed for juniors and seniors capable of doing independent work on selected topics under the directions of specific faculty. For example, if a course is not regularly offered in a specific area of interest to a particular student, and if there are not enough students in the topics course, the student may, with the permission of the instructor, enroll in independent study.

Students may earn a maximum of 12 credits in departmental independent study courses, but may not enroll for more than six credits per semester. Only majors in sociology and anthropology or related fields can enroll in these courses. All students entering these courses must have completed a minimum of 12 credits in sociology or anthropology and achieved an overall sociology/anthropology GPA of 2.7 or more.

### Cooperative Education Program

The Cooperative Education Program is available to qualifying students pursuing undergraduate degrees in sociology and anthropology. A full description of this program appears in Part XX of this bulletin.

### Other graduate work

For information about graduate work and doctoral work in social policy, social work, and urban services, see the Graduate Bulletin. These advanced degree programs are of particular interest to sociology and anthropology students.

### Courses in anthropology (ANTH)

#### ANTH 103/INTL 103 Cultural Anthropology.

Semester course; 3 lecture hours. 3 credits. A general survey of anthropology with emphasis on learning about and from non-Western cultures.

#### ANTH 105/INTL 104 Introductory Archaeology.

Semester course; 3 lecture hours. 3 credits. A survey of findings of world archaeology, from the campsites of early human ancestors through the rise and spread of civilizations.

#### ANTH 200/AFAM 200/INTL 200 Introduction to African Societies.

Semester course; 3 lecture hours. 3 credits. This course introduces the student to the African continent, its peoples

and cultures. It covers such general characteristics as the physical and geographical features, climate, topography, traditional economies, languages, religions, social systems, and other cultural features that are traditional to its people.

#### ANTH 252 The Archaeology of Richmond.

Semester course; 3 lecture hours. 3 credits. The application of archaeological methods to Richmond's prehistoric, historic, and modern material culture. The city and surrounding counties are treated as an archaeological site and region. The artifacts left by past and present inhabitants provide a foundation for analyzing ways of life in the area.

#### ANTH 301 The Evolution of Man and Culture.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. The application of evolutionary theory to the physical and cultural development of Homo sapiens.

#### ANTH 302 Archaeology Method and Theory.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. The basic theoretical and methodological tools of archaeology, including methods of dating, artifact studies, site interpretation, and regional analysis. Students will learn to apply technical and logical skills by solving simulations of real-world archaeological problems.

#### ANTH 304/SOCY 304/WMNS 304 The Family.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises, and family change in various societies around the world.

#### ANTH 305/INTL 305 Comparative Society.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. An introduction to social anthropology. The study of how social institutions such as marriage, family, law, economics, and government are organized and operate in different kinds of societies.

#### ANTH 311, 312/GEOG 311, 312 History of Human Settlement.

Semester course; 3 lecture hours. 3, 3 credits. A cultural geography of human diffusion over the earth, agricultural and urban systems, exploration, migration, and colonization, and changing attitudes toward the environment. First semester: before 1750. Second semester: during and since the Industrial Revolution.

#### ANTH 315 Anthropological Field Methods and Research Design.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. Overview of quantitative and qualitative anthropological field techniques as well as the ethical dimension of anthropological fieldwork. Basics of research design, effective methodology, and writing grant proposals.

#### ANTH 348/INTL 348 South American Ethnography.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. General ethnographic survey of both highland and lowland indigenous cultures of South America and pertinent cultural changes due to European contact.

**ANTH 349/INTL 349 Contemporary Cultures of Latin America.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. This course surveys contemporary cultures of Latin America. It addresses sociocultural developments from an anthropological perspective and introduces some concepts from developmental anthropology and applied anthropology.

**ANTH 350/INTL 350 Peoples and Cultures of the World.**

Semester course; 3 lecture hours. 3 credits. May be taken for a maximum of six credits in two different world areas. Prerequisite: ANTH 103. A survey of the culture and traditions within a specific geographic area such as Latin America, Oceania, or Southeast Asia. See the Schedule of Classes for areas being offered in a particular semester.

**ANTH 375 Field Archaeology.**

Semester course; 3 lecture, 8 field and laboratory hours. 6 credits. Introduction to archaeological field and basic laboratory techniques. Archaeological data collection (excavation or survey) forms the core of the course.

**ANTH 391 Topics in Anthropology.**

Semester course; 3 lecture hours. 3 credits. Maximum six credits per semester; maximum total of eighteen credits in departmental topics courses that may be applied to the major. Prerequisite: Permission of instructor. Seminar on current specialized areas of anthropological interest. See the Schedule of Classes for specific topic to be offered each semester.

**ANTH 394/HIST 394 Historical Archeology.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ANTH 103 or ANTH 105 and one history course. A review of the methods and findings of historical archaeology from the fifteenth century to the present. Special emphasis on the use of written documents and archaeological artifacts to interpret society and culture in the modern world.

**ANTH 415/INTL 415 Economic Anthropology.**

Semester course; 3 lecture hours. 3 credits. Provides an overview of the anthropological approach to the "economic" in social life. Analyzes the role played by systems of reciprocity and exchange in ethnographic contexts. Concepts employed by anthropologists in the study of traditional subsistence economies are used to examine modern industrialized societies.

**ANTH 416/AFAM 416 The Origin and Evolution of the Idea of Race.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or AFAM 103 or permission of instructor. This course is an exploration of the origins and social history of the "idea" of race from the Middle Ages to the end of the 20th century. Using both historical and anthropological scholarship, the course presents an analytical framework for race as a sociocultural phenomenon.

**ANTH 420/AFAM 420/INTL 420 Women of Africa.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or AFAM 103 or permission of instructor. This

course looks at the traditional roles of women in African Societies and examines how women have coped in different environments. It focuses on the institutionalized aspects of similarities and differences in women's lives in pastoral and horticultural societies and those with mixed economies, and will contrast these with women's roles in large state societies of Africa and in the modern urbanized context.

**ANTH 425/RELS 425 Religion, Magic, and Witchcraft.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103. A survey of the nature and variety of beliefs outside of the major streams of religious thought. Among topics considered are myth, totemism, taboo, and sorcery. Emphasis on understanding supernatural beliefs and practices in relation to culture and society.

**ANTH 449/LING 449/ENGL 449 Introduction to Linguistics.**

Semester course; 3 lecture hours. 3 credits. An introduction to methods of language analysis, emphasizing the study of sounds and sound patterns, and units of meaning and their arrangements. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

**ANTH 450/ENGL 454/INTL 454 Cross-Cultural Communication.**

Semester course; 3 lecture hours. 3 credits. A study of the dynamics of cross-cultural communication that applies linguistic tools to understanding cultural issues and solving communication problems.

**ANTH 454 Anthropological Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103 or SOCY 101. Major theoretical approaches in understanding cultural similarities and differences.

**ANTH 490 Senior Project.**

Semester course; 1 credit. Restricted to major. Students must register for this course with the permission of an instructor. Students are required to produce a project report that must be approved by and submitted to the instructor of the course.

**ANTH 492 Independent Study.**

Semester course; variable credit. Maximum of six credits per semester; maximum total of twelve credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least twelve credits in the departmental discipline. Determination of the amount of credit and permission of the instructor and department chair must be procured prior to registration for the course. Cannot be used in place of existing courses.

**Courses in sociology (SOCY)****SOCY 101 General Sociology.**

Semester course; 3 lecture hours. 3 credits. An introduction to the study of human society. The basic concepts of society and culture and their relationships to each other are studied and then used to analyze the major social institutions.

**SOCY 104/AFAM 104 Sociology of Racism.**

Semester course; 3 lecture hours. 3 credits. The course will

explore the direct and indirect ways in which racial attitudes are acquired, their effect on the individuals and society, and the institutional and ideological manifestations of racism as a "faith system," as exploitation, and as a form of racism as a "faith system," as exploitation, and as a form of human conflict. The central focus of interest will be on black-white relationships.

**SOCY 205/POLI 205 Introduction to Social Science Computing.**

Five-week course; 4 lecture/laboratory hours. 1 credit. An introduction to the use of SPSS for storage, retrieval and exploration of social science data. Required of all sociology and anthropology majors concentrating in sociology.

**SOCY 302 Contemporary Social Problems.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. The examination from a sociological perspective of contemporary social problems such as population growth, crime, racism, family problems, substance abuse, and aging in terms of their impact on American social institutions and values.

**SOCY 303 Sociology of Deviant Behavior.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An analysis of relationship between social structure, social control, and patterns of social deviance; a survey and critique of present social theories in light of empirical research and application of the theories to selected problem areas.

**SOCY 304/ANTH 304/WMNS 304 The Family.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises, and family change in various societies around the world.

**SOCY 305/AFAM 305/WMNS 305 Sociology of the Black Family.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. A sociohistory of the development of the dynamics of the black family.

**SOCY 310 Social Movements and Social Conflict.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Theory and practice of social movements, community organizing, and other forms of collective behavior.

**SOCY 315 Education and Society.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of education as a social institution in the societal context. Cross-cultural comparative perspectives on education.

**SOCY 318 Social Thought.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A review of the ideas of major social philosophers whose works are now the foundation of much modern sociology.

**SOCY 320/POLI 320 Research Methods in the Social Sciences.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: SOCY/POLI 205 or equivalent. Current methods of research in the social sciences.

**SOCY 321 Class, Status, and Power.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of social mobility, class, status, and power.

**SOCY 322 Minority Groups in the United States.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A study of the various racial, religious, and ethnic minority groups. Issues of power, pluralism and assimilation are addressed as well as the relationship between subcultures and the dominant culture.

**SOCY 325 Analysis of Sociological Data.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisites: SOCY 320 and STAT 210. Statistical techniques used in the analysis of data from sample surveys and censuses, including tabular, graphical and inferential procedures. SPSS software will be used in the laboratory.

**SOCY 327 Urban Sociology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Origin, character, and significance of urban communities. Ecological and social factors are analyzed as well as changes in urban social organization and their consequences.

**SOCY 328/INTL 328 Russian Society in Transition.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of the instructor. An analysis of Russian culture and social institutions as they are today and in historical perspective. Throughout the course interrelationships among politics, the economy and social life are examined, with particular emphasis on the ideological implications of Russian/Soviet architecture, art, and mass media; on environmental issues and health; on social problems and the legal systems; and on gender, the work world, and family interaction.

**SOCY 330/INTL 330 Global Societies: Trends and Issues.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INTL/POLI 105 or POLI 201 or SOCY 101. An analysis of factors that are promoting the globalization of social, economic, and political relations, and an inquiry into implications of these developments for individuals, localities, nations, and the world community. The course will highlight the impact of culture and ethnicity, historical and emerging patterns of international business activity and their societal significance, divergent strategies for economic and social development in the world's regions, and the effects of population growth and environmental problems on public life within and among nations.

**SOCY 331 Juvenile Delinquency.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of the biological, cultural, psychological, and social factors involved in juvenile delinquency and their relation to current techniques of treatment, prevention, and control.

**SOCY 333/WMNS 333 Sociology of Sex and Gender.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. A cross-cultural and

evolutionary exploration of the interdependence between male and female roles in the following social institutions: family, law, economics, politics, religion, education, and health.

**SOCY 334/WMNS 334 Sociology of Women.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized.

**SOCY 340 Self and Society.**

Semester course; 3 lecture hours. 3 credits. Focused discussion of the regularities in human behavior that arise due to man's participation in social groups. Emphasis will be placed on such topics as communications, attitudes, language, interpersonal perception, personal identities, and social interaction.

**SOCY 341/PSYC 341 Group Dynamics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Social and psychological principles and research related to the individual in groups. Specific topics include motivation for individuals forming and joining groups, performance and productivity of group members, group leadership, and majority and minority influence. The group will be examined in relation to the larger society and as a subculture in itself.

**SOCY 352 Social Change.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. This course provides an analysis of the major theoretical perspectives, sources, processes, patterns, and consequences of social change. It considers factors that stimulate or hinder the acceptance of change and the unintended consequences of change.

**SOCY 360/RELS 360 Sociology of Religion.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A systematic review and assessment of major sociological theories of and empirical research on religious behavior and groups. Topics include the structure of religious organizations; social correlates and functions of religion; denominationalism; religion and social class, social change and population.

**SOCY 370 Mass Media and Society.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101, MASC 101, or POLI 103. A survey of the organization and social impact of the major types of mass media. Potential topics include the media as socializing agents; the effect of media messages on cultural patterns and social values; the impact of technology on social behavior; the role of "audiences" in interpreting media content; political and economic influences on the media industry; and the media as an instrument of social change. The structure and functions of the media in different societies will be compared.

**SOCY 391 Topics in Sociology.**

Semester course; 3 lecture hours. 3 credits. Maximum six credits per semester; maximum total of 18 credits in all

departmental topics courses that may be applied to the major. Check with department for specific prerequisites. A discussion of specialized areas of sociological interest. See the Schedule of Classes for specific topics to be offered each semester.

**SOCY 401/AFAM 401 Americans and the U.S. Health Care System.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: AFAM 103, AFAM 305 or permission of the instructor. Explores issues surrounding the disparity in health status and health outcomes between African-Americans and other groups in the United States. Students are required to participate in an experiential exercise designed to enhance learning.

**SOCY 402 Sociological Theory.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: At least 18 credits in sociology. A study of the works of the major sociological theorists of the 20th century.

**SOCY 403 Criminology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Analysis of the nature, extent, and distribution of crime, emphasizing theories of and research on causation, prediction, and prevention.

**SOCY 404/PSYC 404 Social Psychology of Emotions.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PSYC 101, SOCY 101. An examination of the social shaping of emotion as well as its function in maintaining the social process. Cross-cultural uniformities and diversity in basic emotions and their expression are addressed as well as selected social psychological theories of emotions.

**SOCY 405 Family Research.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY/ANTH/WMNS 304. Classic and contemporary issues in the scientific study of families, with an emphasis on the examination and evaluation of research.

**SOCY 421 Applied Social Research.**

Semester course; variable credit. May be repeated for a total of six credits. Prerequisites: SOCY 320 and 325. A laboratory course providing training in the application of social research methods under laboratory and field situations to problems of mutual interest to community policy makers and professionals in the disciplines of sociology, social psychology, and anthropology. This course is designed to enhance the skills of students in applied social research. With direct supervision by the instructor, individuals or small groups of students will address themselves to the tasks of defining, designing, and executing research projects.

**SOCY 426 Population Dynamics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. The study of trends in fertility, mortality, population growth, distribution, migration, and composition. The mutual influences of these factors and social organization.

**SOCY 430 Politics, Power, and Ideology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Sociological analysis of political organization and

behavior. Such subjects as distribution and uses of power, creation and management of group conflict, development and diffusion of political ideologies, and problems of bureaucracy and mass society will be considered.

#### **SOCY 434 Sociology of Sport.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. Sport will be viewed as a major social institution within many societies. The class will study the relationship between sport and society both in terms of sport reflecting the ideology and culture of society as well as sport as an active agent of change in society. Race, gender, and social class will be examined within the context of sport.

#### **SOCY 436 Work and Management in Modern Society.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. The study of industrial plants and business organizations as social systems.

#### **SOCY 440 Advanced Social Psychology.**

Semester course; 3 credits. Prerequisite: SOCY 340. The study of how human groups create the environment that, in turn, influences their individual behavior. The symbolic interactionist perspective will be thoroughly explored for its contribution to the study of persons, objects, and meaning.

#### **SOCY 445 Medical Sociology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A survey of the social, economic, cultural, and social psychological factors in health and illness; the sociology of health and medical care organizations and settings; the sociology of health occupations; and the techniques of research in medical sociology.

#### **SOCY 446 Sociology of Mental Disorder.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A survey of selected social, economic, cultural, and social psychological factors in mental health and illness. Such problems as defining mental illness; social factors in the distribution, diagnosis, etiology, and treatment of mental disorders; mental illness as a social role; and research methods used in the sociology of mental illness will be considered.

#### **SOCY 470 News Media in a Democratic Society.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A consideration of the role of the news media in society. The course examines the news industry, including its economic organization and professional norms; news media content; the impact of news media in society, especially on the democratic political process; and the significance of political and economic influences on the functioning of the new media.

#### **SOCY 475 Organizations and Human Behavior.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. A survey of theory and research in social organizations, including the study of behavior in modern complex human organizations.

#### **SOCY 476 Labor, Occupations, and Careers.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101. An examination of labor force participation in

terms of the individual worker's experience, the work setting, the nature of occupations, and labor force composition.

#### **SOCY 490 Senior Project.**

Semester course; 1 credit. Restricted to major. Students must register for this course with the permission of an instructor. Students are required to produce a project report that must be approved by and submitted to the instructor of the course.

#### **SOCY 492 Independent Study.**

Semester course; variable credit. Maximum of six credits per semester; maximum total of 12 credits for all independent study courses. Open generally only to students of junior or senior standing who have acquired at least 12 credits in the departmental discipline. Determination of the amount of credit and permission of the instructor and department chair must be procured prior to registration for the course. Cannot be used in place of existing courses.

#### **SOCY 493 Field Research Internship.**

Semester course; 3 credits. Prerequisite: For sociology and anthropology majors of junior or senior standing; maximum six credits. Applications must be approved by a faculty adviser and by the internship coordinator. Students are placed in organizations that offer supervised work or research experience appropriate to their interests. Each student must work 150 clock hours in the organization and write a sociological analysis of experiences using appropriate fieldwork methodological techniques.

#### **SOCY 498 Honors Research Course.**

Semester course; 3 credits. Prerequisites: Student must be in the honors program of the department and have achieved senior status. This course will entail the planning and execution of a major research project demonstrating a thorough understanding and use of research techniques in sociological/anthropological analysis, knowledge of relevant literature, sophisticated writing and research ability under the direction of a faculty mentor.

#### **SOCY 501 The Foundations of Sociological Theory.**

Semester course; 3 lecture hours. 3 credits. The foundations of theoretical explanation of the social world is addressed from an historical and philosophical perspective. The emergence of contemporary sociological theory in the 19th and 20th centuries is reviewed.

#### **SOCY 502 Contemporary Sociological Theory.**

Semester course; 3 lecture hours. 3 credits. A critical assessment is given of such contemporary theoretical orientations as functionalism, conflict theory, exchange theory, symbolic interactionism, and phenomenology.

### **Course in university studies (UNVS)**

#### **UNVS 291 Interdisciplinary Topics.**

Semester course; variable; 1-4 credits per semester. Maximum total of eight credits in all university studies courses. An interdisciplinary course designed to give the student an overview of a topic not associated with a particular discipline.

## **Department of Urban Studies and Planning**

### **Gary T. Johnson**

Associate Professor and Department Chair (1985)  
B.S. 1972 North Michigan University  
M.U.P. 1974 Wayne State University  
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Accordino, John J. (1986) Associate Professor

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Aspaas, Helen Ruth (1998) Assistant Professor

B.A. 1972 Fort Lewis College

M.A. 1986 University of Nebraska, Lincoln

Ph.D. 1992 University of Colorado, Boulder

Brooks, Michael P. (1987) Professor

B.A. 1959 Colgate University

M.C.P. 1961 Harvard University

Ph.D. 1970 University of North Carolina

Garcia, Margot W. (1989) Associate Professor

B.S. 1961 University of New Mexico

M.S. 1966 University of Wisconsin, Madison

Ph.D. 1980 University of Arizona

Gulak, Morton B. (1972) Associate Professor

B.A. 1961 Pennsylvania State University

M.U.R.P. 1972 Virginia Polytechnic Institute and State University

Ph.D. 1980 University of Pennsylvania

Mooser, John V. (1971) Professor

B.A. 1965 Texas Tech University

M.A. 1967 University of Colorado

Ph.D. 1975 George Washington University

Rugg, Robert D. (1974) Professor

B.A. 1965 Wesleyan University

M.A. 1967 University of Chicago

Ph.D. 1974 University of Ottawa

Wu, Weiping (1995) Assistant Professor

B.A. 1986 and M.U.P. 1989 Tsinghua University

Ph.D. 1996 Rutgers University

### **Emeriti faculty**

Hawthorne, Marijean E. (1975) Associate Professor Emerita

of Geography

B.A. and M.A. California State University at San Jose

Ph.D. University of California at Berkeley

Hormachea, Carroll R., Associate Professor Emeritus

B.A. and M.S. Trinity University

### **The city**

Today, nearly 80 percent of the American people live and work in metropolitan areas. The city has become a center for commerce, industry, the arts and social interaction. It is a place where many people are involved in a great variety of activities. The city is a crowning achievement of civilization and urbanization and has been the means for the development and maintenance of our present society.

Such an intense concentration of human activity is not without its problems: racial discrimination, poverty, substandard housing, traffic congestion, crime and pollution. Urban governments are ill equipped to handle these problems because, among other reasons, the available financial resources are decreasing at a time when the needs for municipal services are increasing.

In response to these unpleasant aspects of modern city life, too many city dwellers are moving to the suburban periphery where they have access to the city's resources and shelter from its problems. More than half of the urban population now resides outside the central city. Much commercial, industrial and recreational activity has also decentralized. The urbanizing suburbs are now beginning to experience the problems of the central city. There is a growing realization that urban problems do not respect boundary lines. The issues are metropolitan in scope and cannot be avoided.

### **Career opportunities**

Opportunities exist in a wide variety of fields for urban studies graduates. Our recent graduates, those who chose work over graduate or professional school, have found useful and meaningful employment in a number of public agencies and organizations, including planning departments, housing authorities, community development departments, transportation firms, social welfare agencies, and a variety of private organizations. Most students who chose graduate school have been accepted to leading institutions, enrolling in programs in architecture, planning, law, public administration, business administration and other majors in the social and behavioral sciences.

The student with a bachelor of science degree in urban studies has acquired those skills needed for graduate school or for satisfying employment.

### **Urban Studies Program**

The Urban Studies Program designed to familiarize the undergraduate with the metropolis (and the benefits achieved through its growth and development); the social science perspective applied to urban problems; and the development and administration of

plans to produce more livable environments.

The major is designed to provide students with an intellectual understanding of urban phenomena and with sufficient methodological skills to undertake entry-level responsibilities in public and private organizations dealing with the issues of urbanization. The program is not pre-professional in nature, but is broad in scope and draws heavily from the liberal arts.

To accomplish these objectives, 12 courses are required of all majors. The courses address basic knowledge across the field of urban studies, including political, economic, and social functions and interactions, the process of planning, research, urbanization and policy making.

The student is able to choose a concentration in planning, public policy and social change, environment, information systems or public management. The Richmond metropolitan area is the primary laboratory for the program, and students are constantly challenged by the opportunities for research and community involvement. These concentrations provide students with greater choices for more detailed study. The student may also decide upon a generalized course of study.

The Urban Studies Program is distinctly interdisciplinary in nature. Faculty members represent the following disciplines and professions: planning, geography, political science, law, urban studies, history, economics, architecture and environmental studies. In addition, supporting urban studies courses are taught by faculty members from other departments within the College of Humanities and Sciences and the university. Students can structure their program of studies to fit individual goals. Intensive participation in curriculum and program planning by urban studies majors is not only encouraged, but solicited.

The most significant distinctions of the Urban Studies Program are:

- a subject that deals with the contemporary world, and
- an opportunity to become directly involved in the community through fieldwork. The fieldwork provides further opportunity to develop skills as well as a transition between academic life and post-baccalaureate work life.

The curriculum is divided into various concentrations of study and a general area of urban studies.

### **Environmental concentration**

The concentration in environmental studies will expose students to natural science fields that are significant for understanding the physical environment of cities, presenting the effects of urban population and land uses on the physical environment, introducing human response to environmental hazards and conditions in a behavioral context, and identifying alternatives for public management of interactions between human beings and environment. The overall objective of the concentration is to introduce the field of environmental management to those urban studies majors who may wish to orient their future experience in this direction.

### **Information systems concentration**

A concentration in information systems within the urban studies major is designed for students interested in urban services and planning careers. This curriculum will provide additional training in computerized information systems.

Courses in this concentration also can be counted toward a certificate in planning information systems. See the Graduate Bulletin for additional details.

### **Planning concentration**

Planning can be defined as a rational approach to decision making. Urban and regional planning is intended to make it possible to evaluate proposals for physical, social and economic development against a backdrop of a comprehensive view of the future. To be useful, such a comprehensive view must be realistic politically, financially and administratively.

Thus, the planning concentration is designed to provide general information about the profession, the subject matter of planning, the theory of planning and its application to urban problems.

### **Public policy and social change concentration**

The growth of American urban communities is to a large extent the result of public policy. Laws made at all three

levels of government influence the physical, social, and economic character of the metropolis. For this reason, a concentration devoted to the study of public policy (how it is made, its implementation, its impact) is central to an undergraduate urban studies curriculum. Moreover, since the study of urban areas includes a focus on social inequality, a knowledge of public intervention aimed at improving social conditions is essential.

Most students, upon graduation, will either work in government or for a private agency whose budget and programming are largely shaped by government. Consequently, packaging courses in a fashion that provides students with an understanding of the political environment and community ethos in which they will work, the administrative machinery (including government budgeting procedures), and government policy as it affects such matters as social interaction, housing, and transportation, provides an integrated education that is both broad and focused.

### Public management concentration

The activities carried out by a public manager are pivotal to a city's administration. Unless they are performed effectively, other activities are jeopardized. In crises, people look to urban managers and expect a quick and sure response.

In preparation for this career, the public management concentration achieves an understanding of management tools and relates these tools to fiscal areas and political boundaries of government. Emphasis is placed upon the manager as a public decision maker. Special attention is placed upon the concepts and practices of management, evaluation, policy analysis, governmental fragmentation, and budgeting. The concentration will prepare the student for entry-level positions in government or graduate study in the public management area.

### Degree requirements

**Bachelor of science in urban studies.** The bachelor of science in urban studies requires 120 credits, including 36 credits within the major. The program is designed so that students may enter as late as their junior year. In addition to the formal core

requirements, all majors are required to complete URSP 242 Computer Applications in Community Analysis or all of the following: INFO 160, INFO 162, INFO 166 and SOCY/POLI 205.

**NOTE: Students must complete STAT 210 Basic Practice of Statistics prior to enrollment in URSP 242. It is imperative that students complete this requirement as early as possible in their program, and that URSP 242 be completed no later than the spring semester of their junior year, since it is a prerequisite for URSP 306 and URSP 313.**

Students majoring in urban studies may not use URSP 116 Introduction to Cities or URSP 316 Urban Life in Modern America toward the major.

Qualified seniors are allowed to enroll in most 500-level courses but should consult their adviser before registering to secure permission of the instructor.

Students with a minimum 2.5 GPA may apply for participation in the Urban Government Internship Program which provides an opportunity to work within the Richmond area on urban and regional problems. **In general, students may not exceed 48 credit hours of urban studies courses.**

However, those students who choose a specific concentration and wish to participate in the internship may exceed this maximum by six credit hours.

All students must successfully complete the following courses:

URSP 245 Housing and Community Revitalization  
URSP/GEORG 302 Land Use Capability  
URSP 304 Urban Social Systems  
URSP/GEORG 306 Urban Economic Geography  
URSP 310 Introduction to Public Planning  
URSP/GEORG 313 Urban Research and Field Methods  
URSP 322 Urban Finance  
URSP 413 Policy Implementation  
URSP 440 Senior Seminar: The Good City  
URSP 541 Urban Public Policy-Making Processes

All students also must successfully complete one course from the concentration in environment, and one course from the concentration in planning. These courses are:

#### Environment (choose one)

URSP/ENVS 331 Environmental Systems  
URSP/ENVS/GEORG 332 Environmental Management

#### Planning (choose one)

URSP 261 Design of the City  
URSP/GEORG/INTL 340 World Cities Outside of North America

To complete a concentration, students must complete successfully three additional courses within that concentration. The concentration in information systems requires four courses. All courses marked with an asterisk are required for that concentration. For those students pursuing a generalized course of study, as well as those within specific concentrations, electives must be selected with the assistance of a faculty adviser so that individual programs will form a coherent body of knowledge in urban studies.

#### Environment

URSP 240 Introduction to Historic Preservation  
URSP 261 Design of the City  
URSP/ENVS 331 Environmental Systems\*  
URSP/GEORG/ENVS 332 Environmental Management\*  
URSP 493 Urban Government Internship  
URSP/GEORG 521 Cartography and Air Photo Interpretation  
URSP 525 Site Planning and Graphics

#### Information systems

INFO 358 Structure and Object Programming\*  
INFO 360 Business Information Systems\*  
INFO 362 Computer Hardware and Software\*  
URSP/GEORG 521 Cartography and Air Photo Interpretation\*

#### Planning

URSP 240 Introduction to Historic Preservation  
URSP 245 Housing and Community Revitalization  
URSP 261 Design of the City\*  
URSP/GEORG/INTL 340 World Cities Outside of North America  
URSP 493 Urban Government Internship  
URSP 525 Site Planning and Graphics  
URSP 552 Urban Transportation Systems

#### Public policy and social change

URSP 245 Housing and Community Revitalization\*  
URSP 261 Design of the City  
URSP 413 Policy Implementation\*  
URSP 493 Urban Government Internship  
URSP 552 Urban Transportation Systems

#### Public management

POLI 331 Public Administration\*  
POLI 432 Public Bureaucracy\*

#### Open electives

URSP/GEORG/INTL 340 World Cities Outside of North America  
URSP 350/EUCU 345/INTL 345 Culture and Urbanism in Great Cities of the World  
URSP 391 Special Topics in Urban Studies  
URSP 392 Independent Study  
URSP 493 Urban Government Internship  
URSP/GEORG 513 Planning Graphics  
URSP/GEORG 521 Cartography and Air Photo Interpretation  
URSP 552 Urban Transportation Systems

\* Required for option

## Concentration in Public Affairs and Administration

Since students majoring in political science or in urban studies cannot minor in their respective major area, the Concentration in Public Affairs and Administration is designed to offer them the opportunity for a broad-based public affairs education. Typical subject matter includes public policy issues and processes, relations between federal, state and local governments, organization theory and public budgeting. The concentration can be combined with an internship designed to provide practical experience and exposure to the process of administration.

### Concentration requirements:

Political science and urban studies majors should take:

- POLI 331 Public Administration
- POLI 432 Bureaucratic Politics
- URSP 413 Policy Implementation
- URSP 322 Urban Finance

## Minor in public affairs and administration

A minor in public affairs and administration is designed for students who wish to prepare for a variety of employment opportunities in government and related fields. It provides an overview of public affairs at the national, state and local levels. Its emphasis is on acquainting students with the political context of public administration, issues of particular importance in the private sector, and the complexity of planning and decision making. By emphasizing both professional skill and analytical thinking, it offers the possibility to develop valuable workplace skills and analytic capabilities that may qualify graduates for professional opportunities with local, state or federal agencies, and an ultimate career in the public sector. A public affairs and administration minor also is solid preparation for graduate study in law, public administration, urban planning, public policy and political science. Students in the minor may arrange an internship to provide experience and practical exposure to public affairs and administration.

### Minor requirements:

The minor consists of 18 upper-level credits. All students must take the following courses:

- POLI 331 Public Administration
- POLI 432 Bureaucratic Politics
- URSP 413 Policy Implementation
- URSP 322 Urban Finance

In addition, two of the following electives are required:

- POLI 310 Public Policy
- POLI 321 Municipal Government and Administration\*
- POLI 322 State and Local Politics
- POLI 329 Intergovernmental Relations
- POLI 334 Issues in Public Employment
- POLI 425 Public Policy in the States
- URSP 310 Introduction to Public Planning
- URSP 541 Urban Public Policy Processes
- POLI 494 Internship or
- URSP 493 Internship (see adviser)

\* Urban studies students take POLI 321

Note: Political science students take URSP 541 or URSP 310

## Minor in urban studies

For a minor in urban studies, the following nine credit hours are required: URSP 315, 316, and URSP 310. An additional nine hours of urban studies electives are to be taken with the advice and consent of an adviser in this department.

## Minor in geography

A geography minor requires 18 credits. At least six credits must be chosen from upper-level courses. Specializations within the minor are available in physical geography, human geography and geographic methodology including cartography, air photo interpretation and geographic information systems.

All students must currently take the following courses:

- GEOG 203, 203L Physical Geography I, with Laboratory
- GEOG 204, 204L Physical Geography II, with Laboratory
- GEOG 307 or GEOG 308 World Regions
- GEOG/ANTH 311 or GEOG/ANTH 312 History of Human Settlement

In addition, numerous upper-division electives are available.

## Master in urban and regional planning

A master in urban and regional planning was established in 1973 to prepare professional planners for employment in state and local government and private firms. The MURP is a two-year program that requires 48 semester hours of course work and internship. Accredited by the Planning Accreditation Board, the curriculum provides a grounding in the theory and methods of planning that is balanced between classroom and field experience. Students may choose a broad program

in comprehensive planning or elect one of four concentrations:

- urban revitalization and historic preservation
- housing and neighborhood planning
- economic development
- physical planning
- environmental planning

There also is the opportunity for a joint degree program within the T. C. Williams Law School at the University of Richmond.

See the Graduate Bulletin for a more detailed description of this program.

## Courses in geography (GEOG)

### GEOG 102 Introduction to Human Geography.

Semester course; 3 lecture hours. 3 credits. An introduction to human geography from a global perspective, emphasizing settlement patterns, human-environment interactions, cultural variations, political transitions, and population change in the global economy.

### GEOG 105/ENVS 105 Physical Geology.

Semester course; 3 lecture hours. 3 credits. A descriptive approach to physical geology dealing with the history and structure of the earth, catastrophic events, and geology as it relates to the contemporary environment. An optional laboratory may be taken with this course. See PHYS/ENVS 105L.

### GEOG 105L/ENVS 105L Physical Geology Laboratory.

Semester course; 2 laboratory hours. 1 credit. Pre or corequisite: GEOG 105/ENVS 105. An optional laboratory course consisting of experiments and activities related to GEOG105/ENVS 105.

### GEOG 203, 204 Physical Geography.

Semester courses; 3 lecture hours. 3, 3 credits. Analysis of the interrelated systems of the earth. First semester: the earth in space, atmosphere, climate, natural vegetation, soils. Second semester: landforms, hydrology, oceanography. Physical Geography Laboratories 203L, 204L are optional.

### GEOG 203L, 204L Physical Geography Laboratory.

Semester courses; 2 laboratory hours. 1, 1 credit. Pre or corequisite: GEOG 203 for 203L, GEOG 204 for 204L.

Optional. First semester: the earth in space, map reading, climates, vegetation, soils. Second semester: landforms, geologic maps, hydrology, oceanography.

### GEOG 302/URSP 302 Land Use Capability.

Semester course; 3 lecture hours. 3 credits. An introduction to the principles, concepts, and knowledge involved in determining the capacity of land under various conditions to support a variety of uses.

### GEOG 306/URSP 306 Urban Economic Geography.

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 242. Explores the nature of work as it is organized in urban businesses, the interdependence of industries, and the



reasons why different cities develop different types of economies. Policies and strategies for developing and maintaining healthy urban economies. Policies and strategies for developing and maintaining healthy urban economies will be discussed in detail. This course is a prerequisite for URSP 322 Urban Finance.

#### **GEOG 307, 308 World Regions.**

Semester courses; 3 lecture hours. 3, 3 credits. An examination of the various regions of the earth, including land forms, climate, resources, peoples, agriculture, and urban conditions. First semester: Anglo-America, Latin America, Western Europe, Eastern Europe, the former USSR. Second semester: Middle East and North Africa, Africa (south of the Sahara), Indian Subcontinent, China, Japan, Southeast Asia, Oceania.

#### **GEOG 311, 312/ANTH 311, 312 History of Human Settlement.**

Semester courses; 3 lecture hours. 3, 3 credits. A cultural geography of human diffusion over the earth, agricultural and urban systems, exploration, migration and colonization, and changing attitudes toward the environment. First semester: before 1750. Second semester: during and since the Industrial Revolution.

#### **GEOG 313/URSP 313 Urban Research and Field Methods.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 210. Pre or corequisite: URSP 242 or permission of instructor. Methods of data collection, organization, and updating; the use of secondary information; applications of elementary statistical analysis and of graphic and cartographic analysis.

#### **GEOG 322 World Political Geography.**

Semester course; 3 lecture hours. 3 credits. A study of geographic factors in world power and international affairs, including such topics as resources, national unity, boundaries, etc. Specific areas of international tension also may be considered.

#### **GEOG 331/ENVS 331/URSP 331 Environmental Systems.**

Semester course; 3 lecture hours. 3 credits. Consists of a broad overview of relevant physical science subjects: climatology, soils science, plant ecology, hydrology, geology, and geomorphology. These subjects are viewed together in a systems framework taking into account the many interactions among environmental systems and between these systems and man.

#### **GEOG 332/ENVS 332/URSP 332 Environmental Management.**

Semester course; 3 lecture hours. 3 credits. Provides a framework for developing environmental management objectives and techniques. The focus of the course is on a study of natural hazards in Virginia and a variety of approaches to reducing losses from these hazards.

#### **GEOG 333/AFAM 333 Geography of Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the land forms, climate, peoples, boundaries, trade, and cultural groupings of the African continent.

#### **GEOG 334 Regional Geography of \_\_\_\_\_.**

Semester course; 3 lecture hours. 3 credits. A study of the

land forms, climate, resources, peoples, agricultural and urban conditions in a specific region such as North America, Europe, Latin America, the Middle East and India, the USSR, and Eastern Europe. See the Schedule of Classes for specific region to be studied each semester.

#### **GEOG 335/ENVS 335 Environmental Geology.**

Semester course; 3 lecture hours. 3 credits. Corequisite: ENVS/GEOG 335L. The relationship between humankind and the physical environment, Earth materials and processes, geological hazards, water, mineral and energy resources, land use, and environmental health and law.

#### **GEOG 340/INTL 340/URSP 340 World Cities Outside of North America.**

Semester course; 3 lecture hours. 3 credits. An examination of urban habitats in a variety of geographical regions, with emphasis on their differences and their common experiences.

#### **GEOG 391 Topics in Geography.**

Semester course; 1, 2, or 3 credits. This course may be repeated with different topics for a maximum of nine credits. Prerequisite: Because of changing subject matter to be treated in this course, permission of instructor is required. Students will have an opportunity to examine in detail a geographical issue of significance. See the Schedule of Classes for specific topics to be offered each semester.

#### **GEOG 401/ENVS 401 Meteorology and Climatology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG 203 or a physical science sequence or permission of instructor. A basic, semiquantitative course in the elements of weather and climate, their driving forces, and their spatial and temporal distribution and variability. Atmospheric motions and circulation, weather forecasting, human impact on weather, and climate.

#### **GEOG 401L/ENVS 401L Meteorology and Climatology Laboratory.**

Semester course; 3 laboratory hours. 1 credit. Pre or corequisite: GEOG 401. A series of laboratory and field experiments designed to quantify the elements of weather and climate and to interpret their local temporal and spatial variations.

#### **GEOG 411/ENVS 411 Oceanography.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: GEOG 203 or PHYS 101 or a natural science sequence or permission of instructor. A basic course in the physical, chemical, and geological properties of oceans and ocean basins. Origin and character of ocean basins, properties of oceanic waters, oceanic circulation, land-sea interactions, marine environments and ecology.

#### **GEOG 451 Cultural Geography of Virginia.**

Semester course; 3 credits. Examination of various cultural geographic factors, focusing on such subjects as contemporary or historical settlement patterns, rural and/or urban development, ethnic groups and migration patterns, or environmental problems. May include field trips.

#### **GEOG 460 Richmond and its Environs.**

Semester course; 4 field/lecture hours. 3 credits. Prerequisite: Upper-division standing or permission of instructor. An analysis through lectures, discussions, and

field trips of Richmond's physical characteristics (its site); relationship with the counties surrounding it (its situation).

#### **GEOG 492 Independent Study.**

Semester course; 1-3 credits per semester. Maximum total of six credits. Prerequisites: Junior or senior standing required. Permission of the instructor and of the Geography Program director must be obtained prior to registering for this course. Under the supervision of a geography faculty member, a student studies a topic of mutual interest.

#### **GEOG 521/URSP 521 Cartography and Air Photo Interpretation.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. An introduction to the preparation and interpretation of data in cartographic form. Included is the methodology of map making, introductory photogrammetry, object recognition, stereograms, area measurement, and mapping from aerial photos.

### **Courses in urban studies and planning (URSP)**

#### **URSP 116 Introduction to the City.**

Semester course; 3 lecture hours. 3 credits. Introduction to the various theories of urbanism and attempt to offer solutions to the problems of urban life in modern civilization. The course will survey the major works of those who have studied cities or offered solutions and alternatives to existing urban structures. The works of noted social reformers, political analysts, economists, and architects as well as urban planners will be examined through lectures, readings, films, slides, discussions, and field trips (when feasible).

#### **URSP 240 Introduction to Historic Preservation.**

Semester course; 3 lecture hours. 3 credits. This course provides a broad overview of the field of historic preservation and the principal issues facing the historic preservation movement today. Students examine the goals, values, and techniques of preservationists; federal, state, and local preservation policies and programs; and the sometimes conflicting roles of architects, historians, archaeologists, planners, bureaucrats, minorities, and developers in the preservation movement. Field trips and guest lectures by professionals engaged in public and private preservation efforts highlight major concepts and topics presented in course readings and class discussion.

#### **URSP 242 Computer Applications in Community Analysis.**

2 lecture and 2 laboratory hours. 3 credits. Prerequisite: STAT 210. Practical introduction to computer softwares and techniques used in urban analysis.

#### **URSP 245 Housing and Community Revitalization.**

Semester course; 3 lecture hours. 3 credits. The purpose of this course is to examine housing issues as a major determinant of the make-up and the quality of community life in modern American society. Attention is given to the public and private forces that influence various components of the housing issue, such as: demand for housing; housing availability to various economic and social groups; housing design and quality (including new construction, rehabilitation, historic preservation, and adaptive re-use), housing finance, and the relationship of housing to planning in metropolitan areas.

**URSP 261 Design of the City.**

Semester course; 3 lecture hours. 3 credits. Architecture, space, and activities play a special role in the overall design of the city. These elements are analyzed to understand their interrelationships and importance to a city's visual character. Architectural styles, civic art, effects of space on the individual, and methods for designing cities will be discussed. The class is for those who want to understand urban design elements and for those who will be involved in city design.

**URSP 302/GEOG 302 Land Use Capability.**

Semester course; 3 lecture hours. 3 credits. An introduction to the principles, concepts, and knowledge involved in determining the capacity of land under various conditions to support a variety of uses.

**URSP 304 Urban Social Systems.**

Semester course; 3 lecture hours. 3 credits. A study of the growth and development of neighborhoods, cities, and metropolitan systems. Analyzes origins of community interests and factors that affect the ability of communities to further their interests. Particular attention is given to how patterns of service delivery and the placement of public facilities affect community interest and whether federal or municipal departments are able to set adequate community service standards.

**URSP 306/GEOG 306 Urban Economic Geography.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 242. Explores the nature of work as it is organized in urban businesses, the interdependence of industries, and the reasons why different cities develop different types of economies. Policies and strategies for developing and maintaining healthy urban economies will be discussed in detail. This course is a prerequisite for URSP 322 Urban Finance.

**URSP 310 Introduction to Public Planning.**

Semester course; 3 lecture hours. 3 credits. Introduction to theory and practice of governmental planning in the U.S. with emphasis on urban and regional planning. Survey of the history of urban planning, current planning practice at the local level, and the ethical responsibilities of planners.

**URSP 313/GEOG 313 Urban Research and Field Methods.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 210. Pre or corequisite: URSP 242 or permission of instructor. Methods of data collection, organization, and updating; the use of secondary information; applications of elementary statistical analysis and of graphic and cartographic analysis.

**URSP 315 The Evolution of American Cities.**

Semester course; 3 lecture hours. 3 credits. A general survey of how cities developed in the United States and the factors which contributed to the process of urbanization. Emphasis is placed on the public attitudes and values that have dominated particular periods of history and how these values affected the efforts to urbanize. The American city is examined as a vital force in the economic, social, and political development of modern America, as the major location for conflict between people of all persuasions, and as the home of much of what is meant by American "civilization."

**URSP 316 Urban Life in Modern America.**

Semester course; 3 lecture hours. 3 credits. Restricted to non-majors. Examines how a modern city functions, the public services rendered within the city, and the impact of public policy on the city. The city is treated as a system consisting of economic, social, and political activities that influence and are influenced by the physical/demographic environment. Each activity is studied separately with the cause-effect relationships among the activities highlighted by an analysis of public service delivery and, more generally, urban public policy.

**URSP 322 Urban Finance.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: URSP 306. Treats the local government from a practical management perspective as an organization in a political-economic environment. The nature of city expenditures and sources of revenues are explored. Budgeting and taxing decision-making processes are explored in depth. Economic impacts of these decisions on citizens are analyzed and implications for practice drawn.

**URSP 331/ENVS 331 Environmental Systems.**

Semester course; 3 lecture hours. 3 credits. Consists of a broad overview of relevant physical science subjects: climatology, soils science, plant ecology, hydrology, geology, and geomorphology. These subjects are viewed together in a systems framework taking into account the many interactions among environmental systems and between these systems and man.

**URSP 332/ENVS 332/GEOG 332 Environmental Management.**

Semester course; 3 lecture hours. 3 credits. Provides a framework for developing environmental management objectives and techniques. The focus of the course is on a study of natural hazards in Virginia and a variety of approaches to reducing losses from these hazards.

**URSP 340/GEOG 340/INTL 340 World Cities Outside of North America.**

Semester course; 3 lecture hours. 3 credits. Examines the role of cities in the development of a variety of geographical regions outside of North America. Consists of a broad overview of the historical evolution of cities, their internal structure and relation to the world system and urban problems.

**URSP 350/EUCU 345/INTL 345 Culture and Urbanism in Great Cities of the World.**

Semester course; 3 lecture hours. 3 credits. May be repeated under different topics for a total of six credits. Prerequisite: Sophomore standing or permission of instructor. An interdisciplinary course with a dual focus on the origin, expansion, and significance of a city and the specifics of its urban culture. Particular emphasis will be placed on relating the physical, social, and economic aspects of the city's growth and development to the cultural expression of urbanism.

**URSP 391 Special Topics in Urban Studies.**

Semester course; 1, 2, or 3 credits Due to the changing subject matter to be treated in this course, permission of the instructor is required. Students will have an opportunity to examine in detail some questions of significance. See the

Schedule of Classes for the specific topic to be offered each semester.

**URSP 392 Independent Study.**

Semester course; 1-3 lecture hours. 1-3 credits. Junior or senior standing is required. Under supervision of a faculty adviser, who must approve the student taking the course, a student studies a topic of interest.

**URSP 397, 398 Independent Study.**

Semester courses; 2 or 3 lecture hours. 2 or 3 credits. Junior or senior standing is required. Under supervision of a faculty adviser, whose consent is required to register, study a topic of concern to the student. Examines the role of cities in development of a variety of geographical regions outside of North America. Consists of a broad overview of the historical evolution of cities, their internal structure, and relation to the world system.

**URSP 413 Policy Implementation.**

Semester course; 3 lecture hours. 3 credits. An examination of the administrative setting of government and its policy impacts on public programs, policy design and redesign, and evaluation and monitoring.

**URSP 440 Senior Seminar: The Good City.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Senior standing. Readings, discussion, and individual research into "the good city" as it is expressed theoretically and practically. Perspectives from the arts and humanities, as well as the social sciences, are brought to bear on the normative question, "What is the good city?" A research project is a requirement.

**URSP 493 Urban Government Internship.**

Semester course; 150 clock hours in a local legislative body or administrative agency. 3 credits. May be repeated once for a maximum total of six credits or 300 clock hours. Approval of selection committee required. Under supervision of a faculty committee and a field supervisor, the internship is designed to present opportunities for qualified students to acquire exposure to aspects of public decision-making processes by participation in (1) local legislative bodies of the Richmond metropolitan area; (2) local and regional administrative agencies, commissions, and boards; and (3) private organizations that have demonstrated interest in local government and politics.

**URSP 521/GEOG 521 Cartography and Air Photo Interpretation.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. An introduction to the preparation and interpretation of data in cartographic form. Included is the methodology of map making, introductory photogrammetry, object recognition, stereograms, area measurement, and mapping from aerial photos.

**URSP 525 Site Planning and Graphics.**

Semester course; 3 lecture hours. 3 credits. Addresses the environmental impacts and capacity of environmental systems in relation to the site requirements of various urban and rural situations. Introduces the use of graphics as an aid

in presenting and analyzing planning and design ideas, maps and plans.

#### **URSP 541 Urban Public Policy-Making Processes.**

Semester course; 3 lecture hours. 3 credits. Discusses the politics of urban life. Examines the physical, demographic and economic environments in which conflict resolution occurs, as well as the actors on the local, state, and federal levels that participate in the political process.

#### **URSP 552 Urban Transportation Systems.**

Semester course; 3 lecture hours. 3 credits. An examination of urban requirements for mobility, transportation systems, problems of traffic, mass transit, and new concepts for moving people and goods.

### **Minor in Women's Studies**

#### **Diana H. Scully**

Professor of Sociology and Anthropology and Program Director (1976)

B.A. 1970, M.A. 1972 and Ph.D. 1977 University of Illinois, Chicago Circle

Condit, Deirdre M. (1994) Assistant Professor of Political Science and Public Administration and Women's Studies  
B.A. 1982 Idaho State University

M.A. 1991 and Ph.D. 1995 Rutgers University  
Winston, Janet M. (1999) Assistant Professor of English and Women's Studies  
B.A. 1984 University of California, Los Angeles  
Ph.D. 1998 University of Iowa

Women's studies is the interdisciplinary, cross-cultural examination of women's perspectives and experiences.

The minor in women's studies shall consist of 18 credits. Students are required to take the following: (1) WMNS 201 Introduction to Women's Studies, (2) a feminist theory course and (3) a course addressing racial/cultural diversity. The remainder of courses are electives.

#### **Courses in women's studies (WMNS)**

##### **WMNS 201 Introduction to Women's Studies.**

Semester course; 3 lecture hours. 3 credits. An interdisciplinary and cross-cultural introduction to the perspectives and core concerns of women's studies.

##### **WMNS 236/ENGL 236 Women in Literature.**

Semester course; 3 lecture hours. 3 credits. An introduction to literature by and/or about women.

##### **WMNS 301 Feminist Theory.**

Semester course; 3 lecture hours. 3 credits. This course examines the major theoretical traditions and thinkers of feminist theory from the works of early liberal feminists like Wollstonecraft to the present thought of postmodern and

lesbian feminists like Wittig. It examines arguments about human nature, the origins and effects of patriarchy, the conflict between equality and gender difference, and feminist critiques of traditional theories of knowledge.

##### **WMNS 304/ANTH 304/SOCY 304 The Family.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or ANTH 103. The family in its social and cultural context. Analysis of child rearing, marriage, kinship, family crises, and family change in various societies around the world.

##### **WMNS 305/AFAM 305/SOCY 305 Sociology of the Black Family.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. A sociohistory of the development of the dynamics of the black family.

##### **WMNS 316/POLI 316 Women and the Law.**

Semester course; 3 lecture hours. 3 credits. This course will introduce students to the history, politics, and status of women under the American legal system. Topics to be covered may include equal protection, sexual violence, the particular rights of women of color and lesbians, reproductive rights of women of color and lesbians, reproductive rights, women criminals, and women in the legal profession.

##### **WMNS 318/AFAM 318/POLI 318 Politics of Race, Class and Gender.**

Semester course; 3 lecture hours. 3 credits. A study of the racial, class and gender influences on the history and development of political values, conflicts, processes, structures and public policy in the United States.

##### **WMNS 333/SOCY 333 Sociology of Sex and Gender.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or permission of instructor. A cross-cultural and evolutionary exploration of the interdependence between male and female roles in the following social institutions: family, law, economics, politics, religion, education and health.

##### **WMNS 334/SOCY 334 Sociology of Women.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: SOCY 101 or consent of instructor. This course will examine the position and status of women across societies and the social forces that maintain existing patterns and arrangements. The integration of family and work in women's lives will be emphasized.

##### **WMNS 335/PSYC 335 Psychology of Women.**

Semester course; 3 lecture hours. 3 credits. Overview of issues in psychology relevant to women. Topics include: research methods of women's issues; sex-role socialization; women and hormones; psychological androgyny; personality theory and counseling strategies for women; women and language; women and violence; and rape and abuse.

##### **WMNS 339, 340/HIST 339, 340 History of Women in Europe.**

Semester courses; 3 lecture hours. 3, 3 credits. A history of European women from the Greeks to the contemporary world. A major focus of both courses will be primary sources

by and about women. First semester: antiquity to the Enlightenment. Second semester: French Revolution to the present.

##### **WMNS 341/HIST 341 American Women's History.**

Semester course; 3 lecture hours. 3 credits. Through reading, lecture, and discussion, this course analyzes historical changes in the social, cultural, political, and economic position of women in America over the past three centuries. It includes such topics as the differences and similarities of women's experiences across lines of class, race, and ethnicity, the struggle for suffrage and social reform, shifting gender roles, and changing employment opportunities.

##### **WMNS 382/CRJS 382 Women in the Justice System.**

Semester course; 3 lecture hours. 3 credits. Surveys the special situation of women in the justice system as offenders, as victims, and as professional practitioners. Applicable laws and public policy are studied in detail. Issues are punctuated by field trips to juvenile/adult programs and institutions.

##### **WMNS 384/ENGL 384 Women Writers.**

Semester course; 3 lecture hours. 3 credits. A study of selected literature written by women and about women writers. May be repeated once when a different group of writers is studied.

##### **WMNS 390/AFAM 390/HIST 390 Africa and the Americas: Slavery, Gender, and Race.**

Semester course; 3 lecture hours. 3 credits. An examination of various aspects of slavery in Africa primarily, and selected parts of the African Diaspora including the United States, Canada and the Caribbean, with emphasis on African conditions of servility, the Atlantic slave trade, and chattel slavery. The role gender and race played in slavery will be given particular attention.

##### **WMNS 391 Topics in Women's Studies.**

Semester course; 3 lecture hours. 3 credits. May be repeated with different topics for a maximum of six credits. An in-depth examination of specialized areas of interest in women's studies.

##### **WMNS 414/PSYC 414 Psychology of Women's Health.**

Semester course; 3 lecture hours. 3 credits. Overviews the psychological research on women's health. Topics include health behavior change, personality and individual differences, cognitive factors, disease-specific behaviors and interventions.

##### **WMNS 452/ENGL 452/LING 452 Language and Gender.**

Semester course; 3 lecture hours. 3 credits. A study of relationships between the ways women and men use language, relationships between language and power, and ways women and men use language reflects and reinforces cultural attitudes toward gender. May not be used to satisfy the College of Humanities and Sciences requirement in literature.

##### **WMNS 457/ANTH 457 Women, Art and Society.**

Semester course; 3 lecture hours. 3 credits. A re-examination of a variety of issues concerning women, art, and society: the position assigned women within the history of art as it

relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience, and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?"

#### **WMNS 492 Independent Study.**

Semester course; variable credit. Maximum of four credits per semester; maximum total of four credits in all independent study courses. Open generally only to students of junior and senior standing who have acquired at least 12 credits in women's studies courses. Determination of the amount of credit and permission of the instructor and coordinator must be obtained prior to registration for the course.

### **Preparation for professional studies in the health sciences**

#### **Arthur J. Seidenberg**

Assistant Dean for Undergraduate Academic Affairs  
and Coordinator of Pre-Health Sciences Advising and  
Associate Professor of Biology (1968)  
B.S. 1961 Brooklyn College  
Ph.D. 1969 University of Illinois

The College of Humanities and Sciences provides preparatory programs for a number of health sciences programs offered by the MCV Campus. The programs are medicine, dentistry, dental hygiene, clinical laboratory sciences, radiation sciences, nursing, occupational therapy, pharmacy and physical therapy. Pre-veterinary medicine advising is available through the biology department; pre-optometry through the dean's office of the College of Humanities and Sciences.

A Guaranteed Admission Program exists between the College of Humanities and Sciences and the MCV Campus of VCU. This program entitles academically superior high school seniors guaranteed admission to the professional programs mentioned previously.

The Guaranteed Admission Program is open only to high school seniors whose SAT score is at least 1270. A detailed description of this program appears under the University Honors Program heading.

Most students enrolled in a pre-health sciences program in the College of Humanities and Sciences will apply to one of the MCV Campus professional programs. Unless informed otherwise by the student, College of Humanities and Sciences' advisers will help the student prepare an academic program that will meet the requirements of the MCV Campus professional programs. However, since more qualified students

apply to the MCV Campus professional programs than can be accommodated, students are encouraged to apply to other professional schools and to use their elective courses to meet requirements of those institutions.

Students also are advised to plan alternative career choices in the event they are not accepted into a professional program. This recommendation is especially true for students enrolled in a two-year, pre-health sciences program.

Early preparation in meeting the requirements of the alternate major through judicious selection of electives, enables the student to make a smooth transition from a pre-health sciences program to a baccalaureate program.

Virginia residency may be a factor in admission to the MCV Campus health sciences program. For more information about residency, contact the appropriate admissions officer on the MCV Campus.

### **Preparation for the study of medicine and dentistry, pre-Medicine (PMD) and pre-dentistry (PDT)**

Pre-medical Advisory Committee: Charles R. Blem, Leann B. Blem, Carolyn M. Conway, Charlene Crawley, Arthur Engel, Julie Honnold, Todd Houston, Wendy L. Kliever, Suzanne M. Ruder, Arthur J. Seidenberg  
Pre-dental Advisers: Faculty in the departments of Biology and Chemistry

Leaders in medical and dental education encourage students planning to enter these professions to obtain a broad background in the liberal arts, with a study of not only sciences, but the humanities and social sciences, as well. The prospective student should check with the intended school of medicine or dentistry for specific requirements.

Like many schools of medicine, the School of Medicine on the MCV Campus requires a minimum of three years (90 semester hours or their equivalent) in an accredited college or university. But preference is given to candidates who earn a baccalaureate degree prior to the beginning of medical school.

Biological science, general chemistry, organic chemistry, English, mathematics and physics are required for admission to the School of Medicine at VCU. General physiology, genetics, calculus and behavioral sciences, though not

required, are strongly recommended for the pre-medical student.

Like other schools of dentistry, the School of Dentistry on the MCV Campus requires a minimum of 90 credits (or equivalent) taken in an accredited college or university. Biology, general chemistry, organic chemistry, mathematics, physics and English are generally required for admission to the School of Dentistry at VCU. Other courses, such as those in the behavioral sciences and courses involving psychomotor skills are strongly recommended.

Programs of study. Admission to and completion of a pre-medical or pre-dental program offered by the College of Humanities and Sciences does not constitute admission to VCU's School of Medicine or School of Dentistry. The student must apply separately to the medical or dental school of his or her choice at the appropriate time.

A student entering the College of Humanities and Sciences with an interest in preparing for medical or dental school should declare an academic major while also indicating a pre-medical or pre-dental advising track. The classification pre-medical or pre-dental exists to identify the student's career interests, but the student does not earn a pre-medical or pre-dental degree.

For students who are "undeclared" about an academic major initially, the students will clarify their academic interests through regular conversations with their advisers. The students will declare a major in one of the regular four-year degree programs offered by the College of Humanities and Sciences. At the same time, the student will complete the necessary prerequisites for application for admission to the medical or dental school of his or her choice.

Pre-medical and pre-dental students are encouraged to major in fields of greatest interest to them. Students need not major in a science area. In fact, many non-science majors achieve high-acceptance rates into medical and dental schools.

Certain curricula in the College of Humanities and Sciences allow a student to plan a program for entry into medical or dental schools which accept students after completion of three years of successful undergraduate work.

The university will award a bachelor of science degree to a student who has successfully completed the first year of an accredited medical or dental school, provided he or she has completed all the general education requirements for the College of Humanities and Sciences and the requirements in the major. Successful completion of the first year of medical or dental school is accepted as 30 elective credits toward the student's total hours.

### Preparation for the study of veterinary medicine (PVT)

Arthur J. Seidenberg

The bachelor of science in chemistry and the bachelor of science in biology degree programs offered in the College of Humanities and Sciences provide excellent opportunities to complete the necessary prerequisites for application to a veterinary school.

### Preparation for the study of optometry (POP)

Arthur J. Seidenberg

A bachelor of science program offered on the Academic Campus provides excellent opportunities to complete the necessary prerequisites for application to optometry school.

Prospective students are encouraged to pursue a broad background in liberal arts, including sciences, humanities and social sciences. The prospective student should check with the intended school of optometry for its specific requirements.

Many schools of optometry require a minimum of 90 credits (or their equivalent) in an accredited college or university, but preference is given to candidates who earn a baccalaureate degree prior to the beginning of optometry school. Biological science, general chemistry, organic chemistry, physics, mathematics, English and general psychology are generally required for admission to most optometry schools.

### Preparation for the study of dental hygiene (PDH)

Arthur J. Seidenberg

The curriculum in pre-dental hygiene offered by the College of Humanities and Sciences meets the minimum academic requirements for application to

many professional programs, including the bachelor of science degree program in dental hygiene offered by the School of Dentistry on the MCV Campus. Students intending to apply to the junior- and senior-year professional program at another institution should consult that institution's bulletin for specific prerequisites.

Admission to and satisfactory completion of the two-year preparatory program offered by the College of Humanities and Sciences does not constitute admission to the junior- and senior-year professional program on the MCV Campus. In the fall of the year preceding the year of admission, the student must apply separately to that professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia at Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

	credits
ENGL 101-200 Composition and Rhetoric I-II (ENGL 200 taken in second year)	6
STAT 210 Basic Practice of Statistics*	3
CHEM 101, 101L General Chemistry and Laboratory	5
BIOL 101, 101L Life Science and Laboratory	4
BIOL 205, 205L Basic Human Anatomy and Laboratory	4
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4
BIOL 209, 209L Medical Microbiology and Laboratory	4
PSYC 101 Introduction to Psychology	4
SOCY 101 General Sociology	3
SPCH 121 Effective Speech	3
Humanities elective	3
Visual/performing arts	3
Approved electives	14
	<hr/> 60

\* Depending on results of Mathematics Placement Test students might also have to take MATH 151.

### Preparation for the study of clinical laboratory sciences (PCL)

Advisers: Humanities and Sciences  
Office of Academic Advising

The curriculum in pre-clinical laboratory sciences offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the bachelor of science

degree program in clinical laboratory sciences offered by the School of Allied Health Professions on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses. Any student who wishes to transfer to a school other than VCU must transfer to a school that will confer a degree at the completion of the fourth year of study.

Admission to and satisfactory completion of the two-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the junior- and senior-year professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia at Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

	credits	
	1st Sem.	2nd Sem.
<b>First year</b>		
CHEM 101-102 General Chemistry	4	4
CHEM 101L, 102L General Chemistry Laboratory I, II	1	1
BIOL 101 Life Science	3	-
BIOL 101L Life Science Laboratory	1	-
ENGL 101 Composition and Rhetoric	3	-
CLLS 201 Introduction to Clinical Laboratory Science	1	-
MATH 151 Precalculus Mathematics	4	-
Humanities or social sciences courses	-	6
BIOL 205, 205L Basic Human Anatomy and Laboratory	-	4
	<hr/> 17	<hr/> 15
<b>Second year</b>		
ENGL 200 Composition and Rhetoric	-	3
CHEM 309 Quantitative Analysis or CHEM 301 Organic Chemistry	2-3	-
BIOL/PHIS 206, 206L Human Physiology and Laboratory	-	4
Visual or performing arts	-	3
Electives	9	3
	<hr/> 12	<hr/> 13

If a student does not qualify to take CHEM 101 and 101L in the first semester because of a low score on the Mathematics Placement Test or because of placement in CHEM 100 Introduction to Chemistry (needed for additional chemistry preparation), the student should add BIOL 101, 101L General Biology and Laboratory, in the fall semester and plan to take CHEM 102 and 102L the following summer.

### Preparation for the study of nursing (PNR)

#### Gail Turner

Coordinator

Advisers: Leann Blem, Rhoda Perozzi, Arthur J.

Seidenberg

The curriculum in pre-nursing offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the bachelor of science degree program in nursing offered by the School of Nursing on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisites.

Admission to and satisfactory completion of the one year preparation program offered by the College of Humanities and Sciences does not constitute admission to the professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

	First Semester	Second Semester
<b>First year</b>		
ENGL 101 Composition and Rhetoric	3	-
BIOL 101 Life Science	3	-
BIOL 101L Life Science Laboratory	1	-
MATH 131 Introduction to Contemporary Mathematics or STAT 208 Statistical Thinking or STAT 210 Basic Practice of Statistics	3	-
Laboratory science (see PNR worksheet for choices) <sup>†</sup>	-	4
BIOL 205, 205L Basic Human Anatomy and Laboratory	-	4
BIOL 217 Principles of Nutrition	-	3
PSYC 101 Introduction to Psychology	4	-

SOCY 101 General Sociology	3	-
Humanities elective (See PNR worksheet)	-	3
NURS 100 Risk Appraisal and Health Promotion in Today's World or general elective	-	3
	17	17

<sup>†</sup> If high school chemistry (with laboratory) with a grade of "C" or better has not been completed, one semester of chemistry with laboratory must be taken. If high school chemistry with a grade of "C" or better has been completed, choose from: BIOL 102 and 102L, BIOL 103 and 103L, PHYS 101 and 101L, or PHYS 201 and 201L.

### Preparation for the study of occupational therapy (POC)

#### Arthur J. Seidenberg

The curriculum in pre-occupational therapy offered by the College of Humanities and Sciences meets the minimum academic requirements for the bachelor of science degree program in occupational therapy offered by the School of Allied Health Professions on the MCV Campus.

This program is accredited by the American Occupational Therapy Association. Students intending to apply to the junior- and senior-year professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Admission to and satisfactory completion of the three-year (90 credit) preparatory program offered by the College of Humanities and Sciences does not constitute admission to the junior- and senior-year professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the School of Graduate Studies, Virginia Commonwealth University, Richmond, VA 23284-3051.

ENGL 101-200 Composition and Rhetoric I-II (ENGL 200 taken in second year)	6	credits
BIOL 101, 101L Life Science and Laboratory	4	
BIOL 205, 205L Basic Human Anatomy and Laboratory	4	
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4	
STAT 210 Basic Practice of Statistics*	3	
PSYC 101 Introduction to Psychology	4	
PSYC 302 Psychology of Adolescence or PSYC 306 Psychology of Adult Development or GRTY 410 Introduction to Gerontology	3	

PSYC 304 Life Span Development	3
PSYC 407 Psychology of the Abnormal	3
Social science courses (psychology, sociology, or anthropology)	3
Approved electives (minimum)	53
	90

\* Depending on results of Mathematics Placement Test, students may be required to take MATH 131.

### Preparation for the study of pharmacy (PPH)

Advisers: Humanities and Sciences

Office of Academic Advising

The curriculum in pre-pharmacy offered by the College of Humanities and Sciences meets the minimum academic requirements needed for application to many professional programs, including the doctoral degree program in pharmacy offered by the School of Pharmacy on the MCV Campus.

Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Credits earned by examination (AP, CLEP, and so on) will not count toward the 75 credits required for admission to the MCV Campus' School of Pharmacy. However, the content area covered by the examination need not be repeated. Electives may be substituted for the needed credits.

Admission to and satisfactory completion of the two-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the final four years of the doctoral program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the school's admissions committee.

BIOL 101, 101L Life Science and Laboratories	4	credits
BIOL 102, 102L Science of Heredity and Laboratory	5	
ENGL 101-200 Composition and Rhetoric I-II (ENGL 200 taken in second year)	6	

MATH 151 Precalculus Mathematics	4
MATH 200 Calculus with Analytic Geometry	4
CHEM 101-102 General Chemistry	8
CHEM 101L-102L General Chemistry Laboratory I, II	2
PHYS 201-202 General Physics	8
CHEM 301-302 Organic Chemistry	6
CHEM 301L-302L Organic Chemistry Laboratory I, II	4
SPCH 121 Effective Speech	3
Ethics	3
Liberal arts electives*	18
	<hr/> 75

\* The liberal arts electives should represent a well-balanced program of courses in the fine arts, humanities, and social sciences. Choose from anthropology, art history, economics, history, philosophy, political science, psychology, religious studies, sociology, social sciences, foreign languages, literature or music appreciation. Students may not present studio, activity (P.E.), business, mathematics, or science courses.

If a student does not qualify to take CHEM 101 and 101L in the first semester because of a low score on the Mathematics Placement Test or because of placement in CHEM 100 Introduction to Chemistry (needed for additional chemistry preparation), the student should add a three-credit elective in the fall semester and plan to take CHEM 102 and 102L in the summer or the following fall semester.

Since this program requires students to take 17-18 credits every semester in order to finish the course work in four semesters, they should consider taking some courses during the summer between their freshman and sophomore years. Physical education credits cannot be used to meet the above prerequisites.

### Preparation for the study of physical therapy (PPT)

Arthur J. Seidenberg

The curriculum in pre-physical therapy offered by the College of Humanities and Sciences meets the minimum academic requirements for application to many professional programs, including the physical therapy program offered by the School of Allied Health Professions on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Admission to and satisfactory completion of the three-year (90 credits)

preparatory program offered by the College of Humanities and Sciences does not constitute admission to the professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the School of Graduate Studies, Virginia Commonwealth University, Richmond, VA 23284-3051.

Admission into this MCV Campus program is determined by the departmental admissions committee. The student's scholastic record and professional suitability are considered by the committee. Even before admission, the student is expected to have knowledge of the practice and goals of the physical therapy profession.

	credits
ENGL 101-200 Composition and Rhetoric I-II*	
(ENGL 200 taken in second year)	6
BIOL 101, 101L Life Science and Laboratory†	4
BIOL 102, 102L Science of Heredity and Laboratory†	5
CHEM 101-102 General Chemistry <sup>A</sup>	8
CHEM 101L, 102L General Chemistry Laboratory I, II <sup>A</sup>	2
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4
PHYS 201-202 General Physics <sup>A</sup>	8
MATH 151 Precalculus Mathematics <sup>A</sup> or	
MATH 200 Calculus with Analytic Geometry <sup>A</sup>	4
STAT 210 Basic Practice of Statistics	3
PSYC 101 Introduction to Psychology <sup>A</sup>	4
Psychology elective	3
Social sciences electives <sup>A</sup>	6
Humanities elective	3
Approved electives (minimum)	30
	<hr/> 90

\* AP credits may be substituted for up to three credits.

† Students should take BIOL 151, 151L, 152, and 152L if they plan to major in biology. AP credits may not be used to fulfill the biology requirement.

<sup>A</sup> AP credits may be used to satisfy requirement.

To complete the social sciences, psychology, and humanities requirements, students are encouraged to take courses in child, adolescent, or abnormal psychology; personality, developmental, or psychology of adjustment; sociology, anthropology, economics, history, philosophy, logic, counseling, and human relations.

To complete the total requirements, students are encouraged to choose courses from computer science, embryology, histology, comparative anatomy, vertebrate or human anatomy, kinesiol-

ogy, physiology, foreign languages, and physical education courses that deal with an analytical approach to human movement or motor learning. At least eight hours of electives must be upper-level courses. A "D" grade in any of the required courses shown above is not acceptable toward admission.

### Preparation for the study of radiation sciences (PRA)

Leann Blem  
Coordinator

The curriculum in pre-radiation sciences meets the minimum academic requirements for the bachelor of science degree program in clinical radiation sciences with concentrations in radiography or nuclear medicine technology or radiation therapy offered by the School of Allied Health Professions on the MCV Campus. Students intending to apply to a professional program at another institution should consult that institution's bulletin for specific prerequisite courses.

Admission to and satisfactory completion of the one-year preparation program offered by the College of Humanities and Sciences does not constitute admission to the sophomore year professional program on the MCV Campus. In the fall of the year preceding the year of desired admission, the student must apply separately to the professional program on the MCV Campus through the Director of Admissions, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298-0632.

Admission into the program is based on scholastic record, demonstrated aptitude and interest, and a personal interview conducted by the departmental admissions committee.

	credits
ENGL 101 Composition and Rhetoric I	3
MATH 151 Precalculus Mathematics	4
BIOL 101, 101L Life Science and Laboratory	4
BIOL 205, 205L Basic Human Anatomy and Laboratory	4
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4
PSYC 101 Introduction to Psychology	4
PHYS 201-202 General Physics	8
CMSC 128 Computer Concepts and Application	3
	<hr/> 34

**Preparation for professional studies in law (PLW)**

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Advisers: Husain Mustafa, Department of Political Science; Carol D. Rasnic, Department of Marketing and Business Law; James L. Hague, Department of Criminal Justice

Few law schools list specific undergraduate courses as prerequisites for admission, thus, the student considering law school can major in virtually any department in the College of Humanities and Sciences or the School of Business.

However, students preparing for law school are encouraged to obtain a broad liberal arts background with emphasis

on the social sciences, philosophy, and English. Students interested in law school may decide to complete the philosophy of law minor. This minor program is described under the Department of Philosophy and Religious Studies.

Pre-law advisers maintain continual contact with law school admissions offices and will assist any interested student with questions about curriculum, financial assistance, application procedure, and the law school admission test (LSAT).



# School of Allied Health Professions

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## Undergraduate Programs and Specializations

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Occupational Therapy B.S.  
Radiation Sciences B.S.  
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    radiation therapy  
    radiography

**Located on the MCV Campus, the School of Allied Health Professions offers its students professional programs designed to prepare them for the unique changes occurring in today's health-care environment.**

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[views.vcu.edu/sahp](http://views.vcu.edu/sahp)

#### **Cecil B. Drain**

Professor and Dean (1993)  
 B.S.N. 1976 University of Arizona  
 M.S. 1980 University of Arizona  
 Ph.D. 1986 Texas A & M University

#### **Dolores G. Clement**

Associate Professor and Associate Dean (1988)  
 B.A. 1970 Mount Saint Joseph  
 M.A. 1979 Ohio State University  
 M.S. 1981 Rush University  
 Dr.P.H. 1988 University of California, Berkeley

#### **Stephen C. Harvey**

Assistant Professor and Assistant Dean (1977)  
 M.Ed. 1975 Virginia Commonwealth University

#### **Debra A. Ropelewski**

Assistant Dean (1983)  
 B.S. 1982 Virginia Polytechnic Institute  
 and State University  
 M.B.A. 1988 Virginia Commonwealth University

#### **Jeffrey R. Lodge**

Director of Information Systems (1992)  
 B.A. 1987 Emory and Henry College

1974, a baccalaureate program in radiation sciences, with specific concentrations in education and in administration, has been established. A Ph.D. program in health services, organization and research, the first doctoral program for the School of Allied Health Professions, was introduced in 1982. In 1985 the existing Department of Gerontology was transferred administratively to the School of Allied Health Professions. In June 1988 an executive master's program in health administration was introduced. An entry-level master's degree professional program in physical therapy was initiated for students matriculating in Aug. 1989. In 1995 the Department of Rehabilitation Counseling was transferred to the School of Allied Health Professions from the School of Community and Public Affairs. An interdisciplinary, distance-learning doctoral program, the Ph.D. in Health Related Sciences, began in fall 1998.

### **Programs**

Departments and programs currently in this school and the degrees or certificates conferred on their graduates are:

#### **School of Allied Health Professions**

Doctor of Philosophy in Health Related Sciences

#### **Department of Gerontology**

Master of Science

Postgraduate Certificate in Aging Studies

Postgraduate Certificate in Aging Studies and Master of Social Work – offered in conjunction with the School of Social Work

Postgraduate Certificate in Aging Studies and Master of Science in Rehabilitation Counseling

#### **Department of Health Administration**

Master of Health Administration

Master of Health Administration/Juris Doctorate – offered jointly with the T. C. Williams School of Law at the University of Richmond

Master of Science in Health Administration (Executive Program)

Doctor of Philosophy in Health Services, Organization, and Research

#### **Department of Clinical Laboratory Sciences**

Bachelor of Science in Clinical Laboratory Sciences

Master of Science

#### **Department of Nurse Anesthesia**

Master of Science in Nurse Anesthesia

#### **Department of Occupational Therapy**

Bachelor of Science in Occupational Therapy

Master of Science in Occupational Therapy

Master of Science

#### **Program of Patient Counseling**

Post-baccalaureate Certificate in Patient Counseling

Master of Science (pending SCHEV approval)

#### **Department of Physical Therapy**

Master of Science

Doctor of Philosophy – Physical Therapy track offered in conjunction with the departments of Anatomy and Physiology, School of Medicine

#### **Department of Radiation Sciences**

Bachelor of Science in Clinical Radiation Sciences

#### **Department of Rehabilitation Counseling**

Master of Science in Rehabilitation Counseling

Post-master's Certificate in Professional Counseling

Detailed descriptions of all graduate programs may be found in the Graduate Bulletin.

### **Philosophy**

The faculty of the school is committed to offer, through the establishment and maintenance of rigorous standards of excellence, undergraduate and graduate education that will prepare students for professional careers in the several allied health disciplines.

Development of professional attitudes, emotional maturity and ethical behavior are vital components of the educational process. It is essential that students gain a deep respect for the dignity of man and the inherent rights of patients and others who receive services. Programs are designed to include not only the development of skills to assure excellence in quality of health care, but also such factual knowledge and experiences that will provide the basis for continuing intellectual and professional growth.

Community services of the school and faculty include continuing education, consultative resources and participation in all pertinent areas of health care. An integral part of these efforts is to stimulate and sponsor research activities in the allied health disciplines represented within the school and to encourage interdisciplinary research.

### **Facilities**

Departments and programs in the School of Allied Health Professions are housed in the Randolph-Minor Annex, West Hospital, Newton House, VMI Building, Lyons Building, Grant House, Samuel Putney House and McGuire Hall.

### **History**

The School of Allied Health Professions was established within the Medical College of Virginia of Virginia Commonwealth University on Jan. 1, 1969.

A fundamental reason for the establishment of the School of Allied Health Professions was to provide an administrative structure for existing educational programs in allied health disciplines and to direct the development of new programs in response to the growing need for allied health manpower. At the outset, the school incorporated existing educational programs for hospital administration, medical technology, physical therapy, radiologic technology and X-ray technicians. A program for nurse anesthesia was inaugurated as a separate department in 1969; an existing educational program in occupational therapy located on the Academic Campus was transferred administratively to the School of Allied Health Professions in 1970; also in 1970, a teaching program in patient counseling formerly based within MCV Hospitals was integrated with the school. Since

## Accreditation

VCU and its component schools are accredited by the Southern Association of Colleges and Schools, the general accrediting agency for colleges in the region. The School of Allied Health Professions is an institutional member of the American Society of Allied Health Professions and the Virginia Association of Allied Health Professions. All of its programs are approved or accredited by the appropriate national professional or educational organizations.

## Licensure/accreditation

Graduates of most of the programs offered in the School of Allied Health Professions are required or eligible to take national/state certification of licensure examinations. Requirements of licensing and certifying agencies vary. Some licensure and certification agencies consider individuals convicted of a felony ineligible for licensure or certification. For specific information, prospective students should contact the licensure or certification agency for their allied health disciplines.

## Student performance and behavior

The goals and objectives of the School of Allied Health Professions and its component departments and programs relate to the education of persons preparing for professional careers in the allied health disciplines. An integral requisite of each student and practitioner is an undeviating acceptance of a professional attitude and pride that will motivate him/her to adhere to a code of professional ethics and to develop fully the competencies for practice.

Thus, the suitability of student performance and behavior relating to these professions and to the consumers of health care is a paramount concern of the administration and faculty of this school. Standards of conduct are presented in Part IV of this bulletin and relate to the students in the School of Allied Health Professions. To assure a quality of educational and clinical preparation for its graduates, the following statement also is promulgated:

If, in the judgment of the faculty/administration of the School of Allied Health Professions, a student is not considered suitable

for emotional, professional, or related reasons, the student's academic status may be appropriately altered.

If questions arise regarding standards of performance or behavior, it is the responsibility of students to apprise themselves of acceptable character and conduct requirements prior to matriculation in the designated department or program.

## Attendance regulations

The faculty considers attendance at lectures, laboratories and other functions a requisite to the successful acquisition of the knowledge and skills required of the professional. The faculty cannot condone absence without good reason from any regularly scheduled educational experience. At the start of each course, the instructor will relate to the class the policy of his or her department concerning attendance regulations for that semester. The nature of make-up work in the event of absence will be the prerogative of the instructor.

## Graduate programs

Graduate degree offerings in the School of Allied Health Professions are designated as basic professional or advanced-level programs. Accreditation requirements for the individual programs preclude the establishment of general school admission prerequisites, registration dates, and course and degree requirements.

It is the intent that the regulations and procedures for each program ensure the selection of applicants whose motivation, ability, character and health status qualify them to successfully pursue graduate study. Specific information may be found in the Graduate Bulletin or is available from the departmental graduate coordinator.

## Courses in allied health professions (ALHP)

Nearly all course offerings in the school are provided by departments and programs; however, selected courses considered applicable to many students in these programs have been assigned to the School of Allied Health Professions.

### ALHP 391 Special Topics.

Semester course; 1-4 credits. Prerequisite: Permission of instructor. Offered on undergraduate-level. Interdisciplinary

study through lectures, tutorial study, or independent research of selected topics not provided in other courses.

### ALHP 401 Instructional Strategies.

Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to learning theory, instructional design, evaluation, and methodology. Emphasis will be placed on the study of applying principles and techniques of teaching in all areas of allied health education.

### ALHP 425 Economics of Health Care.

Semester course; 4 credits. Examines the topic of economics as it affects the field of health information management. Approaches broad economic and financial concepts as applied to policy making in the health care industry. Emphasizes the budget process in health care institutions as it affects individual departments and how it requires accountability of each.

### ALHP 582 Supervision in the Allied Health Professions.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study of the supervisory process and staff development, training in communication and interpersonal skills, and public relations within the health facility.

### ALHP 591 Special Topics.

Semester course; 1-4 credits. Prerequisite: Permission of instructor. Interdisciplinary study through lectures, tutorial study, or independent research of selected topics not provided in other courses.

### ALHP 594 Health Education Practicum.

Semester course; 1 lecture and 4 laboratory hours. 1-6 credits. Prerequisite: ALHP 573. Preparation, presentation, and evaluation of selected educational experiences in the appropriate graduate program. Section 01: General; Section 02: Nurse Anesthesia; Section 03: Clinical Laboratory Sciences.

### ALHP 596 Supervisory and Administrative Practicum in Allied Health Clinics.

Semester course; 60 clinical hours per credit. 1-9 credits. Prerequisite: Permission of instructor. The course is designed for the student who will be assuming supervisory and administrative roles. Areas to be covered include clinical personnel management, budgeting and ordering of materials and equipment, consultation with physicians, developing and troubleshooting clinical methods, designing job descriptions, and implementation of quality control programs. Section 01: CLS; Section 02: PT.

## Department of Clinical Laboratory Sciences

### Barbara J. Lindsey

Associate Professor and Department Chair (1975)  
R.T. 1971 Mohawk College  
M.S. 1977 Medical College of Virginia of Virginia Commonwealth University

Nadder, Teresa S. (1983) Assistant Professor

B.S. 1978, M.S. 1989 and Ph.D. 1998 Medical College of Virginia of Virginia Commonwealth University

Prentice, Katherine A. (1969) Assistant Professor

B.S. 1963 Medical College of Virginia of Virginia Commonwealth University

M.A. 1977 Central Michigan University

Sauer, Ronald L. (1978) Associate Professor

A.A. 1968 American River College

B.A. 1970 California State University

M.A. 1972 University of California

Sommer, Sandra J. (1974) Associate Professor

B.A. 1968 Wartburg College

M.S. 1974 Medical College of Virginia of Virginia Commonwealth University

Ph.D. 1987 Medical College of Virginia of Virginia Commonwealth University

Wakayama, J. Edgar (1998) Associate Professor

B.A. 1967 Northeastern University

M.S. 1972 University of Oregon Health Science Center

Ph.D. 1985 University of Nevada

#### Adjunct faculty

Frank E. Einsmann

Patricia H. Rinald

Debra D. Sauer

#### Medical adviser

Richard A. McPherson, Professor, Department of Pathology

#### History

Clinical laboratory scientists have been trained at the Medical College of Virginia of VCU since 1928. However, the department (formerly school) of Medical Technology was not formally established until 1952 at which time the curriculum included six months of didactic experience with lectures and laboratory sessions held in the department, followed by a six-month rotation through the clinical laboratories. The school offered a certificate and/or degree program which met the requirements of the American Medical Association as implemented through the Board of Schools of the American Society of Clinical Pathologists (ASCP). In 1961-62 the certificate program was discontinued, and all students accepted were required to have previously completed 90 semester hours which included medical technology prerequisites. Upon completion of the course, the students were awarded a bachelor of science degree.

Beginning with the 1974 fall semester, the curriculum was expanded to the current two-year program. Students must have completed 60 semester hours, including medical technology prerequisites, before entrance into the baccalaureate program.

The graduate program in clinical laboratory sciences was started in 1967 to provide advanced education for certified medical technologists/clinical laboratory scientists.

In 1981 the program was modified to accept part-time students and in 1985 to allow candidates holding a degree in another area of science to obtain graduate education in clinical laboratory sciences.

In 1994, the department name was changed to the Department of Clinical Laboratory Sciences.

#### Programs

The department offers the following programs of study:

1. **Bachelor of Science Program.** The junior year of the baccalaureate curriculum is devoted to lectures and laboratory exercises in hematology, biochemistry, immunology, immunohematology, clinical microscopy, microbiology, parasitology, and instrumentation. During the summer between the junior and senior years, students complete a three-week introductory clinical practicum in a Virginia hospital laboratory. In the senior year, students spend 15 weeks in a clinical rotation at a full-service, technologically-advanced hospital laboratory. In addition to these clinical experiences, the senior year includes advanced courses in each medical science discipline, and instruction in management, education, and computer applications in the clinical laboratory. Certified medical laboratory technicians may partially fulfill course requirements of the program by transfer of credits and/or by successfully completing challenge examinations for certain courses.

Students may be admitted on a part-time basis in both fall and spring semesters. Because of course sequencing, students accepted part-time should contact the department upon notification of acceptance in order that a curriculum plan can be established prior to entrance into the program.

2. **Master of Science Program.** The department offers two graduate-level tracks in clinical laboratory sciences.

The advanced master's track is designed for students holding a baccalaureate degree in clinical laboratory sciences (medical technology) and generalist certification. Candidates may specialize and complete a project or thesis in clinical chemistry, hematology, microbiology, immunohematology, immunology or instrumentation/computer applications. In addition to the basic science requirement, each student will choose an area of secondary emphasis in biomedical research, education, management or business.

The categorical master's track in clinical laboratory sciences is designed for students with a baccalaureate degree in biology or chemistry. This option provides specialized study, including a clinical practicum, in one of the following areas: clinical chemistry, hematology, microbiology or immunohematology. A project or thesis is required. Upon completion of the program, students are eligible to take a national certification examination in the area in which they performed their concentrated study.

The master's degree requires a minimum of 34 credit hours. For a more detailed description, refer to the Graduate Bulletin. Access the information from the VCU School of Graduate Studies' home page under the School of Allied Health Professions link.

— — — [www.vcu.edu/gradweb/programs](http://www.vcu.edu/gradweb/programs)

#### Mission

The Department of Clinical Laboratory Sciences, in concord with the mission statements of the School of Allied Health Professions and the university, provides an environment that nurtures excellence in education, research and service.

The department provides the student with superior studies in clinical laboratory science, including both theoretical and applied clinical education, and develops problem-solving expertise, leadership capabilities and communication skills. A mature, responsible approach to the acquisition of knowledge is cultivated in order to establish the student's continued intellectual growth and enthusiasm for the profession. The department fosters fair and equitable educational experiences for students of all ages and diverse backgrounds. Strong affiliations with clinical educators and the integration of innovative technology in the academic setting facilitate both the education and research goals of the department.

The department meets the growing health care needs of the community by providing highly competent and professional clinical laboratory scientists who will be able to function effectively upon entrance into the field and be prepared to explore future scientific and technological advances in laboratory science.

The department promotes continued professional development and personal growth for the faculty and staff to fulfill and balance the individual's abilities and aspirations with the departmental, school, and institutional mission and needs. We conduct ourselves in a forthright manner and practice the highest standard of quality performance.

#### Objectives

The objectives of the Department of Clinical Laboratory Sciences are:

- to provide an educational program which prepares students to accurately perform and evaluate analytical tests on body fluids, cells and products,

- to foster the development of professional conduct, interpersonal communication skills and ethical principles, and
- to develop and promote strategies for lifelong learning and to encourage continued professional growth through research, continued education and active participation in professional societies.

### Accreditation

The undergraduate program in Clinical Laboratory Sciences is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, 8410 W. Bryn Mawr Ave., Suite 670, Chicago, IL 60631-3415; (773) 714-8880. Upon graduation the student is eligible to take the national examinations given by the Board of Registry of the American Society of Clinical Pathologists and the National Credentialing Agency for Laboratory Personnel (NCALP).

### Facilities

The Department of Clinical Laboratory Sciences is located in the Randolph-Minor Annex Building on the MCV Campus. All faculty and clerical offices are located in this facility, as well as student classrooms, general teaching laboratory, computer facilities, and a student lounge/reading room. An auxiliary instrumentation laboratory is located in McGuire Hall, approximately four blocks from the primary facility.

The teaching laboratories are well equipped with the latest instrumentation used in today's methods of laboratory medicine.

### Honors and awards

**A. D. Williams Award.** An annual award may be made, on nomination of the faculty, to a student in each class who demonstrates, by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity, and realization of the opportunities for personal development will be considered. The award is made at the end of the junior and senior years.

**Achievement awards.** These awards may be given for outstanding achievement in each discipline in clinical laboratory sciences. The awards are given at graduation.

**Daria Downing Scholarship Award.** This award is in memory of Miss Daria Downing, who was the chief technologist of the clinical laboratories of MCV Hospitals from 1964 until her death in 1982. This award is given in December to an outstanding senior student in the Department of Clinical Laboratory Sciences.

**Kupfer Award.** This award was first given in 1965 in memory of Dr. Henry G. Kupfer, who was medical director of the School of Medical Technology from 1952 until his death in 1964. It is given to the senior who is considered to be the best all-around technologist. Throughout the program this student must demonstrate an outstanding sense of responsibility in all phases of clinical laboratory science, a keen concern for the patients, and the ability to work with others. The student must show a desire for personal and professional growth. The recipient of the award is selected by instructors in the clinical rotations and the faculty of the Department of Clinical Laboratory Sciences.

### Financial aid — general

Financial aid is available for all students meeting the criteria for financial assistance. For details of the programs available contact the Financial Aid Office, P.O. Box 980244, Richmond, VA 23298-0244 or telephone: (804) 828-9800.

### Bachelor of Science in Clinical Laboratory Sciences Program

Clinical laboratory scientists receive training in the following areas: clinical biochemistry — the study of chemical reactions that occur in normal and diseased processes, hematology — the study of the cellular elements of the blood and blood forming tissues, microbiology — the study of microbiological aspects of infectious disease and the isolation and identification of pathogenic bacteria, immunohematology — the application of theory and principles of blood banking, cell typing, compatibility testing, and antibody identification, and immunology — the study of antigen and antibody interaction in the diagnosis of disease. With the rapid advancement of knowledge in the field of laboratory medicine, there is a growing need for highly skilled and knowledgeable clinical laboratory scientists. Employment is found in hospitals,

physicians' offices, research facilities, forensic, biomedical, electronic or instrumentation laboratories, industrial quality control, veterinary clinics, and sales and service of health care equipment. In addition to the technical arena, opportunities as managers or consultants exist for graduates of this program.

**Admission and general requirements.** To qualify for admission, a candidate must have completed a minimum of 60 semester hours of collegiate training in any college or university approved by a recognized regional accrediting agency. Accredited collegiate training in preparation for the study of clinical laboratory sciences as for any professional career, should provide the opportunity for broad general education to include English, the social sciences, the arts, and the humanities.

On entry to the department, the student must have completed 12 hours of chemistry (eight hours of general required; the remaining four hours in the order of preference: quantitative, organic, or qualitative; other courses may be accepted); 12 hours of biology (preferred four hours of general, four hours of human physiology, and four hours of human anatomy); three hours of mathematics; six hours of English composition; three hours of humanities (select from courses in history, philosophy, political science, religion, foreign languages, literature, art history or art appreciation); three hours of social sciences (select from courses in anthropology, economics, geography, psychology, social science or sociology) and one hour of arts.

In lieu of a formal course, demonstrated competence in a visual or performing art will be accepted. Acceptable competency includes (1) completion of extracurricular formal instruction independent of structured school activities once per week for a minimum of 18 months within the last ten years or (2) completion of an AP studio art course or (3) prior training coupled with current routine performances in an organized theater company, gallery, or orchestra/band.

**Special admissions.** Certified medical laboratory technicians (or those eligible for certification) may qualify for special admission. An MLT applicant must have a minimum of 44 non-MLT semester hours of transferable credit for admission as a full-time student or

38 non-MLT semester hours for admission as a part-time student. The transfer hours must include eight hours of biology, eight hours of chemistry, three hours of mathematics, and six hours of English composition. MLTs admitted under special status are required to complete the science, humanities, social sciences and art requirements for regular admission before they qualify for graduation. Transfer credits are accepted for some CLLS courses. Challenge examinations are offered.

Deadline for submission of applications is May 15. Those received after the deadline will be considered if space is available. Admission notification is done on a rolling basis after receipt of application materials. Detailed information regarding admission requirements and an application may be obtained by writing to the Office of Undergraduate Admissions, Medical College of Virginia Campus of Virginia Commonwealth University, P.O. Box 980632, Richmond, VA 23298-0632, or to the Department of Clinical Laboratory Sciences, Medical College of Virginia Campus of Virginia Commonwealth University, P.O. Box 980583, Richmond, VA 23298-0583 or from the Internet.

— — — [views.vcu.edu/sahp/cls/](http://views.vcu.edu/sahp/cls/)

**Academic Regulations.** The minimum passing grade for all professional courses leading to the bachelor of science degree is "D." All courses must be completed with a passing grade for the student to be eligible for promotion or graduation. Satisfactory completion of the previous semester's course work is a prerequisite to the next semester.

Promotion is based on recommendations of the faculty. The student is expected to:

- maintain a grade-point average of 2.0 or better,
- obtain a passing grade in all courses,
- complete the clinical education requirements to the satisfaction of the clinical and academic faculty,
- exhibit the attitudes and skills deemed necessary to function as a professional clinical laboratory scientist, and
- pay all fees.

Detailed grading policies plus the mechanism for grade appeals are given to each entering student during orientation.

## Curriculum

Variable credit is offered in consideration of the differing academic backgrounds of entering students. Semester hours given for each course are those required of the traditional student with no previous clinical training.

Junior Year	Credits
CLLS 301-302 Hematology	7.5
CLLS 303 Parasitology	1.0
CLLS 304 Clinical Microscopy	2.0
CLLS 306 Immunohematology	4.5
CLLS 307 Introduction to Pathogenic Microbiology	3.0
CLLS 308 Pathogenic Microbiology	5.0
CLLS 310 Clinical Immunology	4.5
CLLS 311-312 Biochemistry	8.0
CLLS 314 Clinical Instrumentation	3.0

### Summer Session

CLLS 337 Clinical Education	1.0
	<hr/> 39.5

### Senior Year

CLLS 407 Interpretive Immunohematology	2.5
CLLS 408 Advanced Microbiology	2.0
CLLS 409 Interpretive Hematology	2.0
CLLS 410 Advanced Clinical Biochemistry/Instrumentation	2.0
CLLS 411 Principles of Education/Management	3.0
CLLS 412 Clinical Correlations	1.0
CLLS 415 Special Topics in Clinical Laboratory Sciences (optional)	1-6
CLLS 483 Biochemistry Practicum	3.0
CLLS 485 Hematology Practicum	3.0
CLLS 493 Clinical Microbiology Practicum	3.0
CLLS 494 Miscellaneous Clinical Practicum	3.0
CLLS 496 Blood Bank Practicum	3.0
CLLS 438 Research Paper (optional)	1.0
	<hr/> 27.5-34

Upon completion of prerequisite courses and the prescribed curriculum listed above, graduates of the Clinical Laboratory Sciences program, will have fulfilled the general education requirements of VCU.

## Courses in clinical laboratory sciences (CLLS)

### CLLS 201 Introduction to Clinical Laboratory Science.

Semester course; 1 lecture hour. 1 credit. Open to students on the Academic Campus who are interested in clinical laboratory science/medical technology as a career. Presentation and discussion of clinical laboratory science including an introduction to each of the specific areas of concentration, a tour of a hospital laboratory and job opportunities in the profession.

### CLLS 300 Basic Concepts.

Semester course; 1 lecture and 1 laboratory hour. 1.5 credits. An introduction to the basic concepts/techniques applicable

to all laboratory science areas. Includes optical physics, quality control, laboratory safety, medical terminology, and pipetting techniques along with other basic subjects.

### CLLS 301-302 Hematology.

Continuous course; 4.5 lecture and 6 laboratory hours. 2-7.5 credits. A study of the blood and blood-forming tissues.

Emphasis is placed on hematologic techniques, accurate identification of normal and abnormal cells, and their correlation with normal or pathologic conditions. An introduction to the hemostatic mechanism also is presented.

### CLLS 303 Parasitology.

Semester course; 1 lecture hour. 0.5-1.5 credits. A study of the life cycles of parasites and techniques used for isolation and identification of common parasites found in man.

### CLLS 304 Clinical Microscopy.

Semester course; 1.5 lecture and 1 laboratory hour. 1-2 credits. A study of the principles and practices of urinalysis, kidney function, gastric analysis, cerebrospinal fluid, and other body fluids.

### CLLS 306 Immunohematology.

Semester course; 2.5 lecture and 4 laboratory hours. 2-5 credits. Prerequisite: CLLS 310. A study of the theory and principles of blood banking with an emphasis on methods and techniques used in the laboratory for cell typing, cross-matching, and antibody identification.

### CLLS 307 Introduction of Pathogenic Microbiology.

Semester course; 3 lecture hours. 1-3 credits. Fundamental principles of diagnostic pathogenic microbiology.

### CLLS 308 Pathogenic Microbiology.

Semester course; 3 lecture and 4 laboratory hours. 3-5 credits. Prerequisite: CLLS 307 or permission of instructor. The study of bacteria, fungi, viruses, antimicrobial susceptibility testing, and quality control; the relationship of bacteria, fungi, and viruses to infectious diseases including pathogenesis and epidemiology. Emphasis is placed on the techniques, methods, and procedures required to isolate and identify pathogenic microorganisms.

### CLLS 310 Clinical Immunology.

Semester course; 3.5 lecture and 2 laboratory hours. 3-4.5 credits. Introduces the basic principles of immunology, serology and molecular diagnostics. Emphasis is placed on laboratory evaluation of the immune response including both cellular and humoral aspects. Serologic techniques are practiced in the laboratory sessions.

### CLLS 311-312 Biochemistry.

Continuous course; 6 lecture and 4 laboratory hours. 2-8 credits. A study of metabolism in normal and disease processes of the body. Emphasis is placed on the principles and methods used in testing biochemical reactions.

### CLLS 314 Clinical Instrumentation.

Semester course; 2 lecture and 2 laboratory hours. 1-3 credits. Covers instrumentation found in clinical laboratories, including an introduction to electronic principles as applied

to instrumentation. Course will examine the theory and application behind the various analytical methods used in clinical analysis.

#### **CLLS 337 Clinical Education.**

Semester course; 120 clock hours. 1 credit. Offered: S. Supervised clinical experience in hospitals across the state is designed to give the student a broader clinical education, and to provide venipuncture experience. In addition to the application of academically acquired knowledge, this affiliation provides an opportunity for the student to correlate each area of study into one composite picture for final laboratory diagnosis. Closer working relationships with other allied health personnel is an important aspect of this affiliation.

#### **CLLS 407 Interpretive Immunohematology.**

Semester course; 2.5 lecture hours. 2-2.5 credits. Prerequisites: CLLS 306 and 310 or permission of instructor. Advanced study of the principles of immunohematology and immunology with major emphasis on blood group systems and blood components. Includes the application of laboratory data and techniques to solve problems in blood banking and immunology.

#### **CLLS 408 Advanced Microbiology.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 307 and 308 or permission of instructor. Advanced study of the principles of pathogenic microbiology. Includes the application of laboratory data and techniques to solve problems in the clinical microbiology laboratory.

#### **CLLS 409 Interpretive Hematology.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 301-302 and 485 or permission of instructor. Advanced study of the principles of hematopoiesis and their pathophysiological correlation to hematological disorders. Interpretation of morphological findings are correlated with case histories. Includes homeostatic problems.

#### **CLLS 410 Advanced Clinical Biochemistry/Instrumentation.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLLS 311-312 and 314 or permission of instructor. Presents an advanced study of (1) the principles of clinical chemistry as related to intermediary metabolism and pathology, and (2) laboratory and hospital information systems. Includes the application of laboratory data and technologies to solve problems in analytical methods and instruments.

#### **CLLS 411 Principles of Education/Management.**

Semester course; 3 lecture hours. 2.5-3.5 credits. Introduces fundamental educational theories and practice, principles of management and employee relations, and healthcare issues from a global perspective with an emphasis on multicultural diversity. Stresses the application of these in the clinical laboratory.

#### **CLLS 412 Clinical Correlations.**

Semester course; 1 lecture hour. 1 credit. Seminars are presented on various aspects of professionalism and the interrelationships of the various laboratory disciplines are dis-

cussed during review sessions. A simulated registry exam is given at the conclusion.

#### **CLLS 415 Special Topics in Clinical Laboratory Sciences.**

Semester course; 1-6 credits. Course provides for tutorial studies, laboratory experience, and/or library assignments in specialized areas for those students who have previous course work or laboratory experience in a specific subject.

#### **CLLS 438/HONR 492 Research Paper.**

Semester course; 1 lecture hour. 1 credit. This course is designed to introduce the student to the fundamentals of scientific writing.

#### **CLLS 483 Biochemistry Practicum.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 311-312. Individual participation in hospital chemistry laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, students are expected to perform and sign out routine laboratory work under supervision.

#### **CLLS 485 Hematology Practicum.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 301-302. Individual participation in hospital hematology laboratories. Students gain practical experience in the use of procedures and instruments by working with the staff. After gaining competence, the students are expected to perform and sign out routine laboratory work under supervision.

#### **CLLS 493 Clinical Microbiology Practicum.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 307-308. Individual participation in hospital bacteriology laboratories. Students gain practical experience in the performance and use of procedures by working with the clinical staff. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision.

#### **CLLS 494 Miscellaneous Clinical Practicum.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisites: CLLS 301-302, 308, 310, 311-312, or permission of instructor. Students gain practical experience in the use of instruments and the performance of procedures by working with the clinical staff. After gaining competence, students are expected to properly perform and sign out routine laboratory work under supervision.

#### **CLLS 496 Blood Bank Practicum.**

Semester course; 40-180 clock hours. 1-4.5 credits. Prerequisite: CLLS 306. Individual participation in hospital blood bank laboratories and Virginia Blood Services. Students gain practical experience in the use of procedures and instruments by working with the staff. Donor drawing and component preparation is observed. After gaining competence, the students are expected to properly perform and sign out routine laboratory work under supervision.

## **Department of Gerontology**

### **Iris A. Parham**

Professor of Gerontology and Psychology and Department Chair (1976)  
B.A. 1970 University of Texas  
M.A. 1973 University of West Virginia  
Ph.D. 1976 University of Southern California

Ansello, Edward F. (1989) Professor and Director, Virginia Center on Aging  
A.B. 1966 Boston College  
MEd 1967 University of Missouri  
Ph.D. 1970 University of Missouri

Cotter, J. James (1996) Assistant Professor of Gerontology and Internal Medicine  
B.A. 1971 Canisius College  
M.A. 1975 State University of New York  
Ph.D. 1996 Medical College of Virginia of Virginia Commonwealth University

Egelhoff, William F., Associate Professor Emeritus  
B.A. 1940 Williams College  
M.B.A. 1943 Harvard University

Harkins, Stephen W. (1979) Professor  
A.A. 1963 Montreat-Anderson Junior College  
A.B. 1966 Montreat-Anderson Junior College  
Ph.D. 1974 University of North Carolina, Chapel Hill

Osgood, Nancy J. (1980) Professor of Gerontology and Sociology and Anthropology  
B.A. 1972 Yankton College  
M.A. 1974 Drake University  
Ph.D. 1979 Syracuse University

Peyton, A. Leigh (1998) Instructor and Project Coordinator, Virginia Geriatric Education Center  
B.S. 1996 Virginia Commonwealth University  
M.S. 1998 Virginia Commonwealth University

Pyles, Michael A. (1990) Assistant Professor of Gerontology and Pharmacy  
B.A. 1977 University of Florida  
M.A. 1979 University of Florida  
Ph.D. 1990 Virginia Commonwealth University

Welleford, E. Ayn (1998) Assistant Professor of Gerontology and Affiliate of Psychology  
B.A. 1990 Averett College  
M.S. 1993 Virginia Commonwealth University  
Ph.D. 1998 Virginia Commonwealth University

## **Master of Science in Gerontology Program**

The graduate degree program in gerontology prepares individuals for careers involving work with the elderly at the national, state, and local levels. The curriculum is designed to provide knowledge for those interested in administration, planning, service delivery, and instructional/staff development. The master's degree requires 42 credit hours. A certificate in aging studies may be obtained with completion of 17 credit hours. A long-term care certificate in aging studies

may be obtained with the completion of 22 credit hours. A more complete description is available in the Graduate Bulletin.

## Department of Health Administration

### Stephen S. Mick

Professor and Department Chair (1999)  
B.A. 1965 Stanford University  
M.Phil. 1972 Yale University  
Ph.D. 1973 Yale University

Clement, Jan P. (1988) Associate Professor and Director, Professional Graduate Programs  
B.S.S. 1976 Cornell College  
M.S.P.H. 1977 University of Missouri  
Ph.D. 1986 University of North Carolina, Chapel Hill

Clement, Dolores G. (1988) Associate Professor  
B.A. 1970 College of Mount Saint Joseph  
M.A. 1979 Ohio State University  
M.S. 1981 Rush University  
Dr.P.H. 1988 University of California, Berkeley

Hurley, Robert E. (1990) Associate Professor  
B.A. 1969 St. Bonaventure University  
M.S.W. 1972 Ohio State University  
M.H.A. 1979 Ohio State University  
Ph.D. 1988 University of North Carolina, Chapel Hill

Luke, Roice D. (1982) Professor  
B.S. 1967 University of California, Berkeley  
M.B.A. 1969 University of California, Berkeley  
Ph.D. 1976 University of Michigan

McCue, Michael J. (1985) Professor and Director, Ph.D. Program  
B.S. 1970 University of Louisville  
M.B.A. 1982 University of Minnesota  
D.B.A. 1985 University of Kentucky

Ozcan, Yasar A. (1979) Professor  
B.A. 1972 University of Istanbul, Turkey  
M.B.A. 1975 Southeastern Louisiana University  
Ph.D. 1988 Virginia Commonwealth University

Shukla, Ramesh K. (1977) Professor  
B.Tech. 1967 Indian Institute of Technology, India  
M.S. 1970 University of Wisconsin  
Ph.D. 1977 University of Wisconsin

Swisher, Karen N. (1987) Associate Professor  
B.S. 1976 Virginia Polytechnic Institute and State University  
M.S. 1977 Virginia Polytechnic Institute and State University  
J.D. 1981 University of Richmond

Wan, Thomas T. H. (1981) Professor  
A.B. 1965 Tunghai University, China  
M.A. 1968 and Ph.D. 1970 University of Georgia  
M.H.S. Johns-Hopkins University

White, Kenneth R. (1994) Assistant Professor and Associate Director, Professional Graduate Programs  
B.S. 1979 Oral Roberts University  
M.P.H. 1980 University of Oklahoma  
B.S.N. and M.S. 1995 Virginia Commonwealth University  
Ph.D. 1996 Medical College of Virginia of Virginia Commonwealth University

### Emeriti faculty

Barker, Thomas C., Professor Emeritus  
B.S. 1954 State University of Iowa  
M.A. 1960 State University of Iowa  
Ph.D. 1963 State University of Iowa  
Cullen Jr., Benjamin T., Professor Emeritus  
B.S. 1944 Virginia Polytechnic Institute and State University  
M.A. 1950 University of Virginia  
Ed.D. 1967 University of Virginia  
Gross, Paul A., Professor Emeritus  
B.S. 1961 University of Georgia  
M.H.A. 1964 Medical College of Virginia  
Kraus, Richard C. (1994) Professor Emeritus  
A.B. 1961 Asbury College  
M.H.A. 1964 Medical College of Virginia  
Norville, Jerry A., Professor Emeritus  
B.A. 1961 University of Maryland  
M.S. 1967 University of Colorado  
M.B.A. 1972 Midwestern University

### Graduate programs

The Master of Health Administration (M.H.A.) Program is designed to provide advanced educational preparation in the direction and management of health care organizations. It is a 60 credit hour program that requires two years of didactic course work and a year-long administrative residency. In conjunction with the M.H.A. program, a joint M.H.A./Juris Doctor (M.H.A./J.D.) is offered with the university of Richmond Law School. The master of science in health administration (M.S.H.A.) Executive Program is designed to provide advanced educational preparation for practitioners with five or more years of progressively responsible managerial or clinical experience. The M.S.H.A. program requires 44 credit hours taken mainly through distance learning and five on-campus sessions over the two years needed for completion. The Ph.D. in Health Services Organization and Research Program is a 57-credit program that prepares individuals for positions as faculty, researchers, policy analysts and top-level staff in complex health organizations. Pursued on a full-time basis, the program requires two years of course work followed by a dissertation. See the Graduate Bulletin for further details on all of these programs.

## Department of Nurse Anesthesia

### Michael D. Fallacaro

Professor and Department Chair (1998)  
B.S.N. 1977 D'Youville College  
B.S. 1981 George Washington University  
M.S. 1984 State University of New York, Buffalo  
D.N.S. 1993 State University of New York, Buffalo

Biddle, Clarence J. (1999) Professor  
B.S. 1980 and M.S. 1982 Old Dominion University  
Ph.D. 1991 University of Missouri  
Drain, Cecil B. (1993) Professor and Dean  
B.S.N. 1976 University of Arizona  
M.S. 1980 University of Arizona  
Ph.D. 1986 Texas A & M University  
Fletcher, Joanne (1998) Assistant Professor  
B.S.N.A. 1981 and M.Ed. 1986 University of Minnesota  
Ed.D. 1994 University of Pittsburgh  
Hartland Jr., William (1984) Assistant Professor  
B.S. 1970 Gordon College  
B.S.N. 1976 Texas Christian University  
M.S. 1984 Texas Women's University  
Ph.D. 1993 Virginia Commonwealth University  
Hotchkiss, Melissa A. (1993) Assistant Professor  
B.S.N. 1986 Old Dominion University  
M.S.N.A. 1990 Medical College of Virginia of Virginia Commonwealth University  
Pontiflet, Addie R. (1986) Assistant Professor  
B.S. 1975 St. Joseph's College  
M.S. 1983 University of Southern Maine  
Reese, Charles A. (1993) Associate Professor  
B.S. 1968 University of Oklahoma  
B.S. 1971 George Washington University  
M.B.A. 1975 National University  
Ph.D. 1977 California Pacific University

## Master of Science in Nurse Anesthesia Program

This graduate degree program in nurse anesthesia is designed to prepare the baccalaureate-educated nurse for entry into practice as a nurse anesthetist. The curriculum combines course work in the basic sciences, the advanced practice of nurse anesthesia, and practical skill gained through clinical practice. The program maintains as its primary objective the graduation of a superb clinical specialist. See the Graduate Bulletin for a more detailed description of this program and the Postgraduate Certified Registered Nurse Anesthetist Professional Program.

## Department of Occupational Therapy

### Shelly Lane

Professor and Department Chair (1996)  
B.S. 1975 Ohio State University  
Ph.D. 1984 University of Texas

Cash, Sandra H. (1984) Associate Professor, Assistant Chair and Director, Entry-level Graduate Program  
B.A. 1970 Bridgewater College  
M.S. 1973 Virginia Commonwealth University  
Copolillo, Albert (1997) Assistant Professor  
B.S. 1976 University of Illinois, Urbana  
M.S. 1981 University of Puget Sound  
Ph.D. 1997 University of Illinois, Chicago Medical Center



- Krishnagiri, Sheama (1997) Assistant Professor  
B.A. 1986 University of California, Los Angeles  
M.A. 1989 University of Southern California  
Ph.D. 1994 University of Southern California
- Lowman, Dianne Koontz (1995) Assistant Professor  
B.S. 1973 James Madison University  
M.S. 1974 James Madison University  
Ed.D. 1994 University of Virginia
- Shepherd, Jayne T. (1986) Associate Professor  
B.S. 1976 University of Virginia  
M.S. 1981 Medical College of Virginia of Virginia Commonwealth University
- Simons, Dianne F. (1993) Assistant Professor  
B.A. 1972 Virginia Polytechnic Institute and State University  
M.S. 1985 Virginia Commonwealth University  
Ph.D. 1999 University of Virginia
- Teitelman, Jodi L. (1983) Associate Professor  
B.A. 1975 University of Richmond  
M.S. 1977 Virginia Commonwealth University  
Ph.D. 1983 Virginia Commonwealth University
- Watts, Janet H. (1980) Associate Professor and Director of Post-professional Graduate Studies  
B.A. 1973 College of William and Mary  
M.S. 1977 and Certificate 1986 Medical College of Virginia of Virginia Commonwealth University  
Ph.D. 1997 Virginia Commonwealth University

#### Adjunct faculty

- |                  |              |
|------------------|--------------|
| David Bauer*     | Steve Gudas* |
| Carolyn Velletri |              |

#### Clinical faculty

- |                  |                    |
|------------------|--------------------|
| Frances Atherton | Teresa Bowers      |
| Jan Chimela      | Elizabeth Coltrain |
| Patricia Cooper  | Annette Ernst      |
| Laura Evans      | Cathy Fleury       |
| Carol Granger    | Judith Hanshaw     |
| Hilda Harrison   | Brenda Hatcher     |
| Sarah Hopkins    | Susan Howard       |
| Carole Ivey      | Lynn Kitchens      |
| Jo Lawlor        | Robin McNery       |
| Lory Osorio      | Carrie Russell     |
| William Schmidt  | Geraldine Seeber   |
| Sheila Selznick  | Kate Smitherman    |
| Carolyn Velletri | Page Wilhoite      |

#### Emeriti faculty

- Madigan, M. Jeanne, Professor Emerita  
B.S. 1956 College of St. Catherine  
M.A. 1972 University of California, Los Angeles  
Ed.D. 1982 Loyola University
- Wolfe, Eleanor V., Associate Professor Emerita  
B.S. 1945 University of North Carolina  
M.A. 1951 Texas Women's University

\* Joint or secondary appointment

#### History

The program in occupational therapy was initiated at Richmond Professional Institute in 1942. In 1965 the graduate

program leading to the master of science degree in basic professional education in occupational therapy was initiated. The School of Occupational Therapy became a department in the School of Allied Health Professions in 1970 after the creation of VCU.

#### Undergraduate program

A curriculum leading to the bachelor of science degree majoring in occupational therapy requires the completion of a minimum of 140 semester credits of work, including over 960 clock hours of fieldwork experience. Twelve weeks of the fieldwork must be continuous. This program is in its last year. Undergraduates may apply for the entry-level master's program.

#### Graduate programs

Two courses of study are offered:

1. A Master of Science in Occupational Therapy Program, a professional degree program designed for students who wish to become occupational therapists. This program may be completed in eight consecutive semesters. Applications will be accepted from students who have completed at least three years of bachelor's degree course work. The professional master's degree program includes academic courses, a research project, and a minimum of 24 weeks of full-time fieldwork.
2. A Master of Science Program for those who are registered occupational therapists. This post-professional master's degree program is designed individually in special areas of concentration. A minimum of 33 semester hours, including a thesis, is required.

#### Honors program

The University Honors Program was established to attract gifted students and to provide them with a challenging opportunity to achieve their highest academic potential. This program is open to all qualified undergraduate students. For a detailed description of qualifications for admission into the University Honors Program, see Part II of this bulletin.

#### Philosophy

The philosophy of VCU's Department of Occupational Therapy embraces the

Philosophical Base of Occupational Therapy stated by the American Occupational Therapy Association (1979):

Man is an active being whose development is influenced by the use of purposeful activity. Human beings are able to influence their physical and mental health and their social and physical environment through purposeful activity. Human life is a process of continuous adaptation. Adaptation is a change in function that promotes survival and self-actualization. Biological, psychological and environmental factors may interrupt the adaptation process at any time throughout the life cycle, causing dysfunction. Purposeful activity facilitates the adaptive process. Purposeful activity (occupation), including its interpersonal and environmental components, may be used to prevent and mediate dysfunction and to elicit maximum function. Activity as used by the occupational therapist includes both an intrinsic and a therapeutic purpose. (AOTA. [1979]. The Philosophical Base of Occupational Therapy. *AJOT*, 33, 785.)

#### Mission

The primary mission of the Department of Occupational Therapy is the preparation of excellent, innovative, adaptable, and responsible occupational therapists as professional leaders for the state and the nation.

In pursuit of this mission, the department:

- fosters student commitment to scientific inquiry and professional competence, and promotes personal growth, balance, and dedication to lifelong learning,
- promotes faculty excellence and collaboration in teaching, scholarship, and research, that model integrity and competence,
- collaborates with the community through education, consultation, and the development of strong linkages with clinical educators and the community, and
- interacts dynamically with the occupational therapy profession and stakeholders, contributing

proactively to the evolution of the profession.

### Accreditation

Both the undergraduate and professional master's degree programs in occupational therapy at VCU are accredited by the Accreditation Council for Occupational Therapy Education, 4720 Montgomery Lane, P.O. Box 31220, Bethesda, MD 20824-1220.

### Facilities

The educational facilities of the Department of Occupational Therapy are located in the VMI Building at the northeast corner of 10th and Marshall streets. During the junior and senior years, fieldwork assignments related to courses are made for students in a wide range of clinics and agencies generally in the Richmond metropolitan area. A minimum full-time 24-week extended fieldwork requirement will be arranged in approved clinical educational facilities throughout the United States.

### Honors and Awards

A. D. Williams Award. An annual award presented to the student who has achieved the highest academic average each year in the undergraduate program.

Cynthia Gudger Garriss Scholarship. Two cash scholarships will be presented to students on the basis of financial need and grades in the Occupational Therapy Program.

### Bachelor of Science in Occupational Therapy Program

No additional students will be accepted into this program. Interested undergraduates should investigate the professional master's degree program as indicated above.

Academic regulations. Currently enrolled undergraduate occupational therapy students are expected to maintain a cumulative grade-point average (GPA) of 2.5 calculated on courses following matriculation and to demonstrate a level of competence in all subject matter.

1. Undergraduate students who fail to maintain a cumulative GPA of 2.5 at the end of the first period of enrollment or any subsequent semesters, or receive a grade of "D" in their occupational therapy

curriculum (regardless of the cumulative GPA) will be placed automatically on probation and notified by the Committee on Academic Standing and Student Progress.

2. Undergraduate students who fail to maintain a cumulative GPA of 2.5 or who accumulate more than two grades of "D" will be considered for dismissal from the program.
3. Students who receive an "F" grade in any required course will be considered for dismissal. If the Committee on Academic Standing and Student Progress decides that dismissal is not warranted, students will be automatically placed on probation.
4. Conditions of probation — students must earn a quality point average the semester of probation sufficient to result in a cumulative GPA of 2.5. Students who are on probation due to "D" grades must retake all but one "D" grade course(s) as designated by the committee, achieving a grade of "C" or better while also meeting all other academic standards. Conditions of probation may also include recommendations for academic counseling, assignments by individual instructors, and other requirements identified by the committee. Only one semester of academic probation is permitted. Students who fail to meet academic standards during the semester of probation or do not successfully complete deficient courses will be considered for dismissal from the program.
5. If a student withdraws or is terminated by the clinical facility before the completion of the Fieldwork Level II course because of poor performance or because of unsafe practices with patients, the student will receive an "F" grade for the course. If a student withdraws, is terminated, or fails a fieldwork experience, the course may be repeated only upon approval by the committee in consultation with the department chair and the fieldwork coordinator. Students may be dismissed from the program or be allowed to continue contingent upon fulfilling remedial activities based on a plan prepared by the fieldwork coordinator and ratified by the Committee on Academic Standing. No more than one additional fieldwork experience will be rescheduled. Opportunity to re-register and repeat the fieldwork course is contingent upon the fieldwork coordinator's ability to locate another facility willing to offer a fieldwork experience to the student and the affirmative support of the committee.
6. To continue in good standing, students also are expected to:
  - a. pay all fees,
  - b. maintain ethical behavior consistent with professional practice as defined in the Occupational Therapy Student Handbook, and
  - c. complete fieldwork requirements to the satisfaction of clinical and academic faculty.
7. Although arrangements are made in advance, students are reviewed prior to placement in Fieldwork Level II education. Students must have satisfactorily completed courses prerequisite to that fieldwork experience and be recommended by the faculty. They must also demonstrate professional behavior as specified in the ethical behavior listed in the Occupational Therapy Student Handbook. Medical problems or emotional instability may delay or prevent fieldwork placement.
8. To graduate with honors, undergraduates must have a GPA of 3.3 or above in all courses taken. If a student has been on probation or received a grade of "F" during the course of study, the student will not be eligible to graduate with honors.

### Curriculum – remaining courses

#### Senior year, fall session

OCCT 403 Development Tasks and Occupational Roles III	2
OCCT 405 Physical Dysfunction and Occupational Therapy III	5
OCCT 409 Skills Laboratory III	3
OCCT 411 Theories of Occupational Therapy	2
OCCT 415 Research Methods in Occupational Therapy	2

**Senior year, spring semester**

OCCT 310 Skills Laboratory II	2
OCCT 407 Psychosocial Dysfunction and Occupational Therapy III	5
OCCT 412 Administration and Supervision of Occupational Therapy	3
OCCT 418 Occupational Therapy in Health Care	3
	<hr/> 13

**Fieldwork sessions**

OCCT 493 Fieldwork: Psychosocial Dysfunction	9
OCCT 494 Fieldwork: Physical Dysfunction	9
OCCT 495 Fieldwork: Specialty (Optional)	6-9

Upon successful completion of the program, students are eligible to take the national certification examination administered by the National Board for Certification in Occupational Therapy. Certification is required by most employers as proof of professional competence.

**Courses in occupational therapy (OCCT)****OCCT 403 Developmental Tasks and Occupational Roles III.**

Semester course; 2 lecture hours. 2 credits. A study of adult ontogenesis and developmental tasks as they interrelate with adult occupational patterns. The course will examine work, productivity, leisure, retirement, and recreation in the adult years with emphasis on the importance of occupational success and balance for adaptation in adulthood and old age.

**OCCT 405 Physical Dysfunction and Occupational Therapy III.**

Semester course; 3 lecture and 6 laboratory hours. 5 credits. Dysfunction as the result of physical disabilities that commonly occur during the adult years will be analyzed. Specific disabilities will be identified and discussed. The theory and practice of occupational therapy intervention in a variety of settings will be presented. Level-one fieldwork will be assigned as a portion of this course.

**OCCT 407 Psychosocial Dysfunction and Occupational Therapy III.**

Semester course; 3 lecture and 6 laboratory hours. 5 credits. This course will focus on common psychiatric disorders of middle adulthood through old age, followed by review of concepts and techniques of occupational therapy evaluation and intervention. Assigned level-one fieldwork will be included.

**OCCT 409 Skills Laboratory III.**

Semester course; 6 laboratory hours. 3 credits. Provides instruction on basic principles of assessment and intervention in the areas of independent living, work and leisure. This includes the nature of work, work evaluation and adaptation, activities of daily living, adaptive devices, and life skills.

**OCCT 411 Theories of Occupational Therapy.**

Semester course; 2 lecture hours. 2 credits. Examines theoretical constructs that are used in various models of

occupational therapy practice. Concepts integral to understanding and using human occupation as a basis for practice are emphasized. Current issues in practice are explored.

**OCCT 412 Administration and Supervision of Occupational Therapy Services.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Covers the management of human and nonhuman resources to provide efficient and effective occupational therapy services; the nature of formal and informal organizations, the administrative process, and administrative tasks. Includes supervision, consultation, and the planning of occupational therapy fieldwork education.

**OCCT 415 Research Methods in Occupational Therapy.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: OCCT 315. Focuses on skills needed to conduct research. Includes developing research problems; quantitative and qualitative design, data collection, analysis and dissemination; real life context of conducting research.

**OCCT 418 Occupational Therapy in Health Care.**

Semester course; 3 lecture hours. 3 credits. This course will cover the impact and relationship of the following to occupational therapy: patterns of health care in the United States and abroad, current issues affecting the delivery of health care, and the allied health professions. The student will learn to analyze community health resources in terms of organizational structure, funding, purposes of services, and client eligibility and accessibility. The influence of these components on occupational therapy services will be stressed.

**OCCT 491 Special Topics in Occupational Therapy.**

Semester course; 3 lecture hours. 3 credits. Designed around the interests of students, faculty expertise, and availability and expertise of Richmond area occupational therapists or visiting lecturers. Format may include intensive mini-courses or workshops, an advanced course, with some knowledge and skills in a specialized area of occupational therapy. This course is optional.

**OCCT 493 Fieldwork - Psychosocial Dysfunction.**

Semester course; 1-9 credits.

**OCCT 494 Fieldwork - Physical Dysfunction.**

Semester course; 1-9 credits.

**OCCT 495 Fieldwork - Specialty (Optional).**

Semester course; 1-9 credits.

**Program of Patient Counseling****Alexander Tartaglia**

Associate Professor and Program Chair (1996)  
B.A. 1973 Colgate University  
M.A. 1976 Andover Newton Theological School  
M.Div. 1978 Andover Newton Theological School  
D.Min. 1981 Andover Newton Theological School

Bonomo, James (2000) Instructor  
B.A. 1965 University of Pittsburgh

Certificate in Spirituality (1987) Washington Theological Union  
Certificate in Spirituality (1988) Jesuit School of Theology  
Cain, Marlyne G. (1978) Assistant Professor  
B.S. 1961 University of South Dakota  
M.Div. 1967 Yale Divinity School  
Th.M. 1970 Princeton Theological Seminary  
Charles-Craft, Ann (1997) Instructor  
B.S. 1974 North Carolina-Greensboro  
M.Ed. 1977 North Carolina-Greensboro  
M.Div. 1988 Southeastern Baptist Theological Seminary  
Certificate in Patient Counseling 1996 Virginia Commonwealth University  
Faulkner, Ken A. (1991) Adjunct Assistant Professor  
B.A. 1979 Averett College  
M.Div. 1984 Southeastern Baptist Theological Seminary  
Certificate in Patient Counseling Virginia Commonwealth University  
M.A. 1998 University of Virginia  
Festa, Daniel K. (1990) Assistant Professor  
B.A. 1974 College of Charleston  
M.L. 1976 University of South Carolina  
D.Min. 1987 Union Theological Seminary  
Certificate in Patient Counseling Virginia Commonwealth University  
Hassell, Alma (2000) Instructor  
B.A. 1994 College of New Rochelle  
M.Div. 1997 Emory University, Candler School of Theology  
Certificate in Patient Counseling 1998 Virginia Commonwealth University  
Linyear, Alice (1999) Adjunct Assistant Professor  
B.S. 1957 LeMoyne College  
M.P.H. 1976 University of North Carolina  
M.D. St. Louis University School of Medicine  
Certificate in Patient Counseling 1998 Virginia Commonwealth University  
Mutia, Lucio (2000) Adjunct Assistant Professor  
B.Th. 1963, B.A. 1972 and M.Div. 1974 Silliman University Divinity School  
Th.M. 1980 SEAGST, Singapore  
Th.D. 1990 South East Asia Graduate School of Theology  
Young Jr., Robert A. (1976) Associate Professor  
B.A. 1965 University of Richmond  
M.Div. 1969 Union Theological Seminary  
D.Min. 1973 Union Theological Seminary  
Certificate in Patient Counseling 1976 Virginia Commonwealth University

**Emeriti faculty**

Mauney Jr., Jacob L., Associate Professor Emeritus  
B.A. 1960 Roanoke College  
M.Div. 1964 Lutheran Theological Southern Seminary  
D.Min. 1980 Lutheran Theological Southern Seminary  
Prest Jr., A. Patrick L., Professor Emeritus  
B.S. 1951 Lehigh University  
M.Div. 1954 Episcopal Theological School  
D.D. 1977 University of the South

**Graduate program**

The Program of Patient Counseling is designed to assist an individual to work



## History

Radiologic technology education began at the Medical College of Virginia in the 1930s with a one-year training program in radiography. This program has undergone a number of changes through the years to evolve into the current baccalaureate educational program.

A concentration in nuclear medicine technology was added in 1984 and in radiation therapy in 1992. Degree completion programs have been added to provide an opportunity for certified technologists and therapists to complete requirements for the baccalaureate degree.

## Programs

A Bachelor of Science in Clinical Radiation Sciences is offered in the following areas of concentration: radiography, nuclear medicine technology, and radiation therapy. These full-time programs include general education and professional course work over a three year period. Graduates of each of the programs are eligible for national certification examinations in their respective area of concentration.

## Mission

The Department of Radiation Sciences is an integral part of the School of Allied Health Professions of the MCV Campus and shares its values. The department serves as a national leader in the education of students in the radiation sciences and provides learning opportunities that are innovative and educationally sound. In addition to exhibiting technical competence and the judicious use of ionizing radiation, graduates provide high quality patient care and leadership in their respective area of professional practice.

The department is accountable to students, their families, faculty, staff, alumni, the professional community and others who have an interest in its activities. Consideration is given to the effective use of unique resources and facilities. Strong linkages with clinical affiliates and their staff are vital to our success. Faculty and staff work in a cooperative spirit in an environment conducive to inquisitiveness and independent learning to help a diverse student body develop to its fullest potential.

The faculty is committed to the concept of lifelong learning and promotes standards of clinical practice that will serve students throughout their professional careers. Faculty serve as a resource for professionals in practice and contribute to an expanded knowledge base in the field of clinical radiation sciences.

## Goals

The goals of the Department of Radiation Sciences are to:

1. deliver thoughtfully developed curricula in radiation sciences for individuals preparing for professional practice,
2. offer timely, relevant educational opportunities that encourage practicing professionals to complete a baccalaureate degree,
3. provide an educational atmosphere that will engender intellectual curiosity, a commitment to lifelong learning and excellence in clinical performance,
4. cultivate an awareness of, and promote behavior consistent with, the importance of professional demeanor and ethical conduct,
5. promote research and scholarly activity in clinical radiation sciences and
6. foster development of faculty, staff and affiliated clinical staff.

## Accreditation

The Radiography and Radiation Therapy programs are accredited by the Joint Review Committee on Education in Radiologic Technology. The Nuclear Medicine Technology Program is accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. Upon completion of one of the concentrations, the graduate is eligible for the relevant national certification examination administered by the American Registry of Radiologic Technologists. Graduates of the Nuclear Medicine Technology Program are also eligible for the certification examination administered by the Nuclear Medicine Technology Certification Board.

## Facilities

The educational facilities for the Department of Radiation Sciences are located in the west wing of the sixth floor of the West Hospital Building,

1200 E. Broad St. These facilities include two well-equipped, energized radiographic laboratories with automatic film processing capabilities.

During the various phases of the curriculum, students will be assigned to one or more of the following affiliate institutions: Medical College of Virginia Hospitals of VCU, McGuire Veterans Affairs Medical Center, and Richmond Division, Columbia HCA Hospitals.

## Honors and awards

**A. D. Williams Award.** This award is given to the student in each class who has achieved the highest cumulative grade-point average.

**A. D. Williams Scholarship.** This scholarship may be awarded to students who demonstrate high scholastic attainment, professional clinical performance and unusual promise as a radiologic technologist.

**Senior awards.** An award may be given to a graduating senior in each curriculum in recognition of outstanding overall performance. Selection is based on cumulative GPA, faculty recommendations and clinical performance.

Radiography — Nycomed Amersham Award  
Nuclear Medicine — Mallinckrodt Award  
Radiation Therapy — Varian Medical Systems Award

**Tina Plaster Memorial Award.** This award honors a member of the class of 1992 who was tragically killed during the term of her program and recognizes a rising radiography senior who displays the following characteristics associated with Ms. Plaster: excellent academic standing, good attendance, excellent patient care and high standards of professionalism.

## Bachelor of Science in Clinical Radiation Sciences Program

Admission requirements. Candidates for admission to any of the three concentrations must have completed high school or have passed a GED examination, and have completed the following postsecondary courses:

	VCU equivalent
3 credits of precalculus	MATH 151
3 credits of general psychology	PSYC 101
3 credits of composition and rhetoric	ENGL 101
3 credits of computer science	CMSC 128
8 credits of human anatomy and physiology	BIOL 205, PHIS 206
8 credits of college physics	PHYS 201, 202

Transcripts of postsecondary work must be submitted with the application. Candidates also must submit personal references and complete an interview with a member of the admissions committee. Applicants are encouraged to obtain some knowledge of the concentration to which they are applying by observing in the appropriate hospital department or by working as a hospital volunteer.

Applications must be submitted by Feb. 1 of each year. Applications submitted after that date can be accepted only on a space-available basis. Correspondence should be sent to the Office of Undergraduate Admissions, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980632, Richmond, Va. 23298-0632.

#### General education requirements

##### I. Communicating

ENGL 101 and ENGL 200 or equivalent – 6 credits  
CLRS 208 – 3 credits, writing intensive  
CLRS 390 – 2 credits; writing intensive  
CLRS 498 – 3 credits, writing intensive

##### II. Ethics

CLRS 208 – 3 credits  
CLRS 393, 394, 395, 493, and 494 – seminars associated with each clinical course  
PHIL 213 – 3 credits (Nuclear Medicine only)

##### III. Quantity and form

MATH 151 or equivalent  
STAT 210 or equivalent  
CLRS 232 – 2 credits  
CLRS 341 – 4 credits  
CLRS 320 – 3 credits (Radiography only)  
CLRS 451 – 3 credits (Radiography only)  
CLRS 461 – 3 credits (Nuclear Medicine only)  
CLRS 323 – 4 credits (Radiation Therapy only)

##### IV. Science and technology

PHYS 201-202 or equivalent – 8 credits  
BIOL 205 - 206 or equivalent – 8 credits  
CMSC 128 or equivalent – 3 credits  
CHEM 101-102 or equivalent – 10 credits (Nuclear Medicine only)

##### V. Interdependence

CLRS 393, 394, 395, 493 and 494 – seminars associated with each clinical course  
HCMG 300 – 3 credits

##### VI. Visual and performing arts

Elective – 1 credit

##### VII. Humanities and social sciences

PSYC 101 – 3 credits  
Humanities elective – 3 credits

Academic regulations. To continue in the respective program, the student is expected to:

1. maintain a minimum semester grade-point and cumulative GPA of 2.0,

2. obtain a passing grade in all required courses and a “C” or better in all professional courses indicated with an asterisk in the curriculum outline, and
3. demonstrate the attitude and skills necessary to function as a professional in the selected area of concentration as assessed by academic and clinical faculty.

## Curriculum

### Radiography concentration

	credits	
	Fall	Spring
<b>Sophomore year</b>		
ENGL 200 Composition and Rhetoric II	-	3
BIOL 200 Biological Terminology	1	-
HCMG 300 Health Care Organization and Services	3	-
STAT 210 Basic Practice of Statistics	3	-
CLRS 203-204 Pathophysiology I and II	3	3
CLRS 206 Cross-sectional Anatomy	-	2
CLRS 208 Foundations of Patient Care*	-	3
CLRS 232 Radiation Safety*	-	2
Electives/humanities electives	6	3
	16	16

### Summer I

CLRS 201 Introduction to Radiographic Imaging*	2	-
CLRS 211 Radiographic Procedures I*	2	-
	4	-

### Junior year

CLRS 311 Radiographic Procedures II*	4	-
CLRS 312 Radiographic Procedures III*	-	2
CLRS 320 Principles of Radiographic Imaging*	-	3
CLRS 320L Principles of Radiographic Imaging Laboratory*	-	1
CLRS 341 Radiation Physics	4	-
CLRS 390 Research Methods in the Radiation Sciences	2	-
CLRS 393-394 Clinical Education I and II*	3	4
Restricted electives	3	6
	16	16

### Summer II

CLRS 395 Clinical Education III*	5	-
	5	-

### Senior year

CLRS 330 Radiobiology*	-	2
CLRS 402 Radiographic Pathology	-	2
CLRS 421 Radiographic Imaging Equipment*	2	-

CLRS 451 Quality Control Methods in Radiography*	3	-
CLRS 488 Senior Seminar	-	1
CLRS 498 Senior Project	3	-
CLRS 493-494 Clinical Education IV and V*	5	5
Restricted electives	3	6
	16	16

### Radiation therapy concentration\*

	credits	
	Fall	Spring
<b>Sophomore year</b>		
ENGL 200 Composition and Rhetoric II	-	3
BIOL 200 Biological Terminology	1	-
HCMG 300 Health Care Organization and Services	3	-
STAT 210 Basic Practice of Statistics	3	-
CLRS 203-204 Pathophysiology I and II	3	3
CLRS 206 Cross-sectional Anatomy	-	2
CLRS 208 Foundations of Patient Care*	-	3
CLRS 232 Radiation Safety*	-	2
Humanities electives	-	3
General electives	6	-
	16	16

### Summer I

CLRS 305 Orientation to Radiation Therapy*	2	-
	2	-

### Junior year

HLTH 487 Coping and Adaptation	-	3
CLRS 309 Oncologic Patient Care*	2	-
CLRS 314 Pathology and Treatment Principles I*	-	4
CLRS 323 Radiation Therapy Techniques and Applications*	4	-
CLRS 341 Radiation Physics	4	-
CLRS 342 Physics for Radiation Therapy	-	3
CLRS 390 Research Methods in the Radiation Sciences	2	-
CLRS 393-394 Clinical Education I and II*	4	4
Elective	-	1
	16	15

### Summer II

CLRS 395 Clinical Education III*	5	-
CLRS 315 Pathology and Treatment Principles II*	3	-
	8	-

### Senior year

CLRS 330 Radiobiology	-	2
CLRS 455 Theory and Practice of Quality Assurance for Radiation Therapy*	2	-
CLRS 488 Senior Seminar	-	1

CLRS 493-494 Clinical Education		
IV and V*	5	5
CLRS 498 Senior Project	3	-
Restricted electives	6	6
	<hr/>	<hr/>
	16	14

**Nuclear medicine technology concentration\***

	credits	
	Fall	Spring
<b>Sophomore year</b>		
CHEM 101-102 General Chemistry	5	5
ENGL 200 Composition and Rhetoric II	-	3
BIOL 200 Biological Terminology	1	-
STAT 210 Basic Practice of Statistics	3	-
CLRS 203-204 Pathophysiology I and II	3	3
CLRS 208 Principles of Patient Care*	-	3
CLRS 232 Radiation Safety*	-	2
HCMG Health Care Organization and Services	3	-
	<hr/>	<hr/>
	15	16

**Summer I**

CLRS 303 Orientation to Nuclear Medicine*	2	-
	<hr/>	<hr/>
	2	-

**Junior year**

PHIL 213 Ethics and Health Care	-	3
CLRS 206 Cross-Sectional Anatomy	-	2
CLRS 317 Clinical Nuclear Medicine: Imaging Techniques I*	2	-
CLRS 318 Nuclear Medicine Imaging II*	-	2
CLRS 321 Nuclear Medicine Instrumentation and Computer Techniques I*	2	-
CLRS 322 Nuclear Medicine Instrumentation and Computer Techniques II*	-	2
CLRS 341 Radiation Physics	4	-
CLRS 344 Physics for Nuclear Medicine	-	3
CLRS 390 Research Methods in the Radiation Sciences	2	-
CLRS 393-394 Clinical Education I and II*	4	4
General electives	2	-
	<hr/>	<hr/>
	16	16

**Summer II**

CLRS 313 Clinical Nuclear Medicine: Nonimaging Techniques*	3	-
CLRS 395 Clinical Education III*	5	-
	<hr/>	<hr/>
	8	-

**Senior year**

CLRS 330 Radiobiology*	-	2
CLRS 417 Advanced Nuclear Medicine Imaging*	3	-

CLRS 453 Theory and Practice of Quality Assurance for Nuclear Medicine*	-	3
CLRS 461 Radiopharmaceutical Preparation and Quality Control*	3	-
CLRS 488 Senior Seminar	-	1
CLRS 493-494 Clinical Education IV and V*	5	5
CLRS 498 Senior Project	3	-
General electives	2	4
	<hr/>	<hr/>
	16	15

\* "C" is lowest passing grade.

+ Elective credits must include a minimum of one credit in visual or performing arts.

**Degree completion programs. Full- or part-time opportunities to complete a baccalaureate degree are offered for technologists or therapists certified by the American Registry of Radiologic Technologists and/or the Nuclear Medicine Technology Certification Board. In addition to general education and professional course work, the student selects electives from a wide variety of courses, allowing the design of a program that best meets the goals and interests of the individual. For further information, contact the department.**

**Courses in clinical radiation sciences (CLRS)****CLRS 101 Introduction to Clinical Radiation Sciences.**

Semester course; 1 lecture hour. 1 credit. Open to students on the Academic Campus who are interested in clinical radiation sciences as a career. Presentation and discussion of the art and science of medical imaging. The use of ionizing radiation will be explored from its discovery to its current application in therapy and medical diagnosis. Radiography, nuclear medicine and radiation therapy will be discussed in terms of career specialties within the profession.

**CLRS 201 Introduction to Radiographic Imaging.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Prerequisite: CLRS 208 and CLRS 232. Introduction to the clinical process, equipment and radiographic imaging. Information will be presented that prepares the student to begin clinical practice. Clinical rotations and lab exercises are designed to expose the student to various aspects of radiographic imaging.

**CLRS 203-204 Pathophysiology I and II.**

Continuous course; 3-3 lecture hours. 3-3 credits. Prerequisites: BIOL 205 and PHIS 206. Presentation of the principles of disease and an introduction to various conditions of illness involving body systems.

**CLRS 206 Cross-sectional Anatomy.**

Semester course; 4 tutorial laboratory hours. 2 credits. Prerequisite: BIOL 205, PHIS 206L, or permission of instructor. A general overview of cross-sectional anatomy at representative

levels will be presented. Emphasis will be on identifying major muscles, organs, bones and vessels on diagrams, photographs and images.

**CLRS 208 Foundations of Patient Care.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 200 or equivalent. Legal, ethical, and technical foundations of patient care will be explored with emphasis on the application of these principles to common radiologic situations.

**CLRS 211 Radiographic Procedures I.**

Semester course; 1 lecture and 3 laboratory hours. 2 credits. Prerequisites: BIOL 205 and PHIS 206 and CLRS 208.

Combines the study of anatomy and physiology and positioning for diagnostic radiographic examinations of the upper extremity, chest and abdomen. During laboratories, students demonstrate competence in radiographic procedures, including positioning of simulated patients, manipulation of radiographic equipment, and evaluation of radiographs.

**CLRS 232 Radiation Safety.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: PHYS 202. Provides an overview of radiation protection as it applies to the radiation sciences. Radiation sources, detection and regulations are presented. In addition, radiation protection responsibilities of the radiologic technologist for patients, personnel and public are discussed.

**CLRS 303 Orientation to Nuclear Medicine Clinic.**

Semester course; 1 lecture and 2 clinical hours. 2 credits. Prerequisites: CLRS 208 and CLRS 232. Designed to acquaint the student with the field of nuclear medicine in general and the Program in Nuclear Medicine Technology in particular. It also provides an introduction to clinical practice.

**CLRS 305 Orientation to Radiation Therapy.**

Semester course; 1 lecture 2 laboratory hours. 2 credits. Prerequisites: CLRS 208 and CLRS 232. Introduction to the clinical process, equipment and history of radiation therapy. Information will be presented that prepares the student to begin clinical practice. Clinical rotations and lab exercises are designed to expose the student to various aspects of radiation therapy.

**CLRS 309 Oncologic Patient Care.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 208. Covers the basic concepts of patient care specific to radiation therapy, including consideration of physical and psychological conditions. Patient interactions, patient examinations, asepsis, local and systemic reactions, nutrition and medications are discussed. Factors influencing patient health during and following a course of radiation will be identified.

**CLRS 311 Radiographic Procedures II.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: CLRS 211. Continuation of CLRS 211 with emphasis on anatomy and physiology and positioning for diagnostic radiographic examinations of the lower extremity, spine, pelvis and thorax, routine contrast studies, and basic and advanced headwork. Laboratory experience will include positioning of simulated patients, positioning and exposure of radiographic phantoms, manipulation of radiographic equipment, and evaluation of radiographs.

**CLRS 312 Radiographic Procedures III.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 311. Continuation of CLRS 211 and CLRS 311 to cover additional positions added to routine examinations. In addition, a variety of routine special studies and special procedures that visualize the circulatory, lymphatic, reproductive, urinary and central nervous systems will be discussed.

**CLRS 313 Clinical Nuclear Medicine: Nonimaging.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 322. Integrates basic anatomy and physiology with nonimaging in-vitro nuclear medicine procedures. Topics include current radiopharmaceuticals of choice, biotrouting of administered radiopharmaceuticals, normal and abnormal test values, and patient or specimen counting techniques.

**CLRS 314 Pathology and Treatment Principles I.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: CLRS 309. Presents the fundamentals of the disease processes for cancer of the following: skin, thorax, genitourinary, gynecological, head and neck, central nervous system, and breast. The malignant condition, etiology, and epidemiology, patient workup, and methods of treatment are discussed. Attention to patient prognosis, treatment results and the effects of combined therapies.

**CLRS 315 Pathology and Treatment Principles II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 309 and 314. A continuation of CLRS 314. Presents the fundamentals of the disease process for the following cancers: gastrointestinal, lymphomas and hematologic malignancies, bone tumors, childhood tumors, eye and orbital tumors. The malignant condition, etiology and epidemiology, patient workup, and methods of treatment are discussed. Attention is given to patient prognosis, treatment results and the effects of combined therapies. Radiotherapeutic emergencies, palliation, and combined modality treatment also will be discussed.

**CLRS 317 Clinical Nuclear Medicine: Imaging Techniques I.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 303. Corequisite: CLRS 321. Presentation of the techniques employed in the performance of routine nuclear medicine imaging procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, biodistribution, imaging protocols, equipment setup, and common findings.

**CLRS 318 Clinical Nuclear Medicine: Imaging Techniques II.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 317. Corequisite: CLRS 322. Presentation of the techniques employed in the performance of non-routine nuclear medicine imaging procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route of administration, bio-distribution, imaging protocols, equipment set up, and common findings.

**CLRS 320 Principles of Radiographic Imaging.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS201 and CLRS 341. The variables which affect image

production and radiographic quality will be presented. Radiographic quality will be analyzed to differentiate between diagnostic and optimal radiographs. Emphasis will be placed on sharpness and visibility of recorded detail.

**CLRS 320L Principles of Radiographic Imaging Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: CLRS 201. Can be taken concurrently with or subsequent to CLRS 320. Designed to demonstrate the effect of radiographic variables on image production and quality. Students will perform lab exercises to manipulate a variety of variables and analyze their effect on the radiographic image.

**CLRS 321 Nuclear Medicine Instrumentation and Computer Techniques I.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 303. Corequisite: CLRS 317. Pre or corequisite: CMSC 128. Presentation of the operating principles of standard nuclear medicine imaging instrumentation systems with their practical applications. Topics include: Planar, SPECT and Positron Imaging devices and their associated components.

**CLRS 322 Nuclear Medicine Instrumentation and Computer Techniques II.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 321 and CLRS 317. Pre or corequisite: CMSC 128. Corequisite: CLRS 318. Combines the principles of nuclear medicine instrumentation with practical operation of the equipment. Instruments presented: survey meters, dose calibration, counting devices, and image processing computers.

**CLRS 323 Radiation Therapy, Techniques and Applications.**

Semester course; 4 lecture hours. 4 credits. Presents the basic concepts of dosimetry and treatment planning. Various external beam techniques and applications, depth dose data, and summation of isodose curves are discussed. Modalities of treatment, patient setup, dose measurement and verification also are included.

**CLRS 330 Radiobiology.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 232 or permission of instructor. The principles of biologic responses to radiation are presented, including factors influencing radiation effects, tissue sensitivity, and tolerance. Clinical applications in radiography, nuclear medicine and radiation therapy are considered.

**CLRS 341 Radiation Physics.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: PHYS 202. Presentation of the production of X-rays and gamma rays; interaction of radiation with matter; units of radioactive exposure and absorbed dose; measurement of radiation; and physical principles of computed tomography, magnetic resonance imaging, sonography, mammography, and digital imaging.

**CLRS 342 Physics for Radiation Therapy.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 323 and CLRS 341. Includes a discussion of the properties of electromagnetic and particulate radiation. Details of

production, interactions, treatment units, measurement of radiation, radioactivity, and brachytherapy are presented.

**CLRS 344 Physics for Nuclear Medicine.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 341. Topics in physics relevant to nuclear medicine technology will be presented. Topics include nuclear decay, nuclear interactions, production of radionuclides, gamma ray spectroscopy, theory of nuclear medicine instrumentation, image processing, and topographic reconstruction.

**CLRS 390 Research Methods in the Radiation Sciences.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: ENGL 200. Pre or corequisite: STAT 210. The fundamentals of the research process will be presented for analysis and discussion. Elements of research appropriate to the radiation sciences will be reviewed. Emphasis will be on the ability to critically review research studies along with the selection and design of a research project.

**CLRS 393-394 Clinical Education I and II.**

Continuous course; variable clinical hours. 3-5 credits. Prerequisites: CLRS 208, CLRS 232 and CLRS 201 or CLRS 303 or CLRS 305. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain practical experience in routine, basic procedures and observe more advanced procedures.

**CLRS 395 Clinical Education III.**

Semester course; 360 clinical hours. 5 credits. Prerequisite: CLRS 394. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic procedures and begin to gain experience in advanced procedures.

**CLRS 402 Radiographic Pathology.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 204 and CLRS 493 or permission of instructor. Introduction to the study of radiographic pathology through reading and observation of film interpretation. Emphasis is on recognizing common disease processes as demonstrated radiographically; where appropriate, understanding how to vary positioning and techniques to produce optimally diagnostic images and the role of different imaging modalities in the evaluation of disease.

**CLRS 405 Principles of Mammography.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: CLRS 201 and CLRS 320 or permission of instructor. Presentations and discussions designed to provide an overview of the principles of mammography. Topics include history, anatomy, physiology and pathology of the breast; exposure techniques; and quality control. Focuses on routine and specialized positioning of the breast and image evaluation to prepare students for practical experience in mammography.

**CLRS 405L Principles of Mammography Lab.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: CLRS 201 and CLRS 320 or permission of instructor. Can be taken concurrently with or subsequent to CLRS 405. Provides simulated experience in performing positioning of the breast.



Students will be expected to demonstrate competence in positioning the breast phantom for a variety of routine and specialized projections. In addition, quality control procedures specific to mammography will be performed.

#### **CLRS 406 Introduction to MRI.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CLRS 341 or permission of instructor. An introduction to the elements of magnetic resonance imaging, including instrumentation, physical principles, image production and quality, MR safety, magnetic resonance angiography, and imaging applications.

#### **CLRS 417 Advanced Nuclear Medicine Imaging Procedures.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: CLRS 318, CLRS 322, CLRS 313. Presentation of the techniques employed in the performance of advanced nuclear medicine imaging procedures. Topics include anatomy and physiology, pathology, patient preparation, contraindications, radiopharmaceuticals, dose route administration, bio-distribution, imaging protocols, computer software techniques, equipment set up and common findings.

#### **CLRS 421 Radiographic Imaging Equipment.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 320. Principles and operation of general and specialized X-ray equipment are presented. Emphasis is on equipment necessary to perform radiographic, fluoroscopic and tomographic examinations.

#### **CLRS 451 Quality Control Methods in Radiography.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisites: CLRS 320 and CLRS 320L. Designed to investigate quality control measures in radiology. Emphasis will be on monitoring components of the imaging system that may affect radiographic quality through improper functioning. Lab exercises will provide students an opportunity to perform various quality control checks on the processor and imaging equipment.

#### **CLRS 453 Theory and Practice of Quality Assurance for Nuclear Medicine.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: CLRS 322. Explores the quality assurance parameters in a nuclear medicine department. Emphasis is given to the performance of tests to assess survey meters, spectrometers, dose calibrators, gamma cameras, and SPECT imaging systems. Additionally, quality assurance is discussed in terms of radiopharmaceuticals, radioimmunoassay laboratories, and patient management.

#### **CLRS 455 Theory and Practice of Quality Assurance for Radiation Therapy.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: CLRS 323. Designed to provide the student with knowledge of the concepts and principles of quality assurance. The performance of various tests, including purpose, sources of malfunction, and action guidelines will be discussed.

#### **CLRS 461 Radiopharmaceutical: Preparation and Quality Control.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits.

Prerequisites: CLRS 303 and two semesters of general chemistry. Provides the technical knowledge necessary for the preparation and quality control of radiopharmaceutical agents for in-vivo and in-vitro nuclear medicine studies.

#### **CLRS 480 Applied Radiology Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Departmental approval. Relates basic concepts in management to the radiologic environment and explores the relationship between the radiologic facility and the health care system.

#### **CLRS 488 Senior Seminar.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: Senior standing in department. Designed to allow students to integrate the various individual courses into a single perspective as it relates to the radiation sciences. New developments and timely professional issues will be presented for discussion. Attention is given to underscoring the responsibilities of health care professionals with emphasis on the need for lifelong learning and participation in professional organizations.

#### **CLRS 492 Directed Study: Radiation Sciences.**

Semester course; 1-4 credits. Maximum of six credits can apply to graduation requirements. Prerequisite: Permission of department chair. Provides the opportunity for individualized research projects, tutorial studies, special clinical work, or other topics not available in formal course work.

#### **CLRS 493 Clinical Education IV.**

Semester course; 360 clinical hours. 5 credits. Prerequisite: CLRS 395. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and in advanced procedures. Opportunities for elective clinical rotations are provided.

#### **CLRS 494 Clinical Education V.**

Semester course; variable clinical hours. 2-5 credits. Prerequisite: CLRS 493. Clinical experience supervised by clinical faculty and affiliate facility staff. Students gain additional practical experience in routine, basic and in advanced procedures. Opportunities for elective clinical rotations are provided.

#### **CLRS 498 Senior Project.**

Semester course; 3 credits. Prerequisites: CLRS 390 and senior standing in department. Provides students the opportunity to explore and investigate a topic of special interest in their area of concentration. Emphasis will be on applying research concepts in the design, implementation and presentation of a project.

## **Department of Rehabilitation Counseling**

### **Brian T. McMahon**

Professor and Department Chair (1997)  
B.S. 1972 Loyola University, Chicago  
M.S. 1974 Illinois Institute of Technology, Chicago  
Ph.D. 1977 University of Wisconsin, Madison

Chandler, Anne L. (1985) Associate Professor and Associate Director, University Honors Program  
B.A. 1969 Vanderbilt University  
M.A. 1974 Michigan State University  
Ph.D. 1978 Michigan State University  
Cull, John G. (1998) Clinical Professor  
B.S. 1959 Texas A & M University  
M.Ed. 1960 Texas A & M University  
Ph.D. 1967 Texas Tech University  
Glenn, Margaret K. (1998) Assistant Professor  
B.A. 1978 Bridgewater College  
M.A. 1984 Virginia Commonwealth University  
Ed.D. 1997 George Washington University  
Luck, Richard S. (1976) Associate Professor  
B.A. 1966 University of Richmond  
M.S. 1968 Virginia Commonwealth University  
Ed.D. 1975 University of Virginia  
Martin Jr., E. Davis (1975) Professor  
B.S. 1968 Virginia Commonwealth University  
M.S. 1970 Virginia Commonwealth University  
Ed.D. 1976 University of Virginia  
Reid, Christine A. (1997) Assistant Professor  
B.A. 1983 Northern Illinois University  
M.A. 1985 Northern Illinois University  
Ph.D. 1993 Illinois Institute of Technology  
Rosecrans, John A.\* (1996) Professor  
Ph.D. University of Rhode Island  
Rule, Warren R. (1972) Professor  
A.B. 1965 Pfeiffer College  
M.A. 1967 Appalachian State University  
Ph.D. 1972 University of South Carolina  
Wehman, Paul H.\* (1998) Professor  
B.B.A. 1970 Western Illinois University  
M.S. 1972 Illinois State University  
Ph.D. 1967 University of Wisconsin, Madison

### **Emeriti faculty**

Gandy, Gerald L., Professor Emeritus  
B.A. 1963 Florida State University  
M.A. 1968 University of South Carolina  
Ph.D. 1971 University of South Carolina  
Hardy, Richard E., Professor Emeritus  
B.S. 1960 Virginia Polytechnic Institute and State University  
M.S. 1962 Richmond Professional Institute  
A.G.S. and Ed.D. 1966 University of Maryland  
A.B.P.P. Diploma in Counseling Psychology  
Jarrell, George R., Professor Emeritus  
B.S. 1949 University of Florida  
M.R.C. 1961 University of Florida  
Ph.D. 1970 University of South Carolina  
Lawton, Marcia J., Associate Professor Emerita  
A.B. 1959 Pembroke College  
M.A. 1961 Northwestern University  
Ph.D. 1963 Northwestern University  
Wright, Keith C., Professor Emeritus  
A.B. 1949 Marshall College  
M.A. 1950 Marshall College

\* Joint appointment

## Undergraduate studies in rehabilitation studies

From 1974 to 1994, the department offered a bachelor of science degree program in rehabilitation services. With the development of national certification groups and licensure laws in most states, professional counseling has become a predominantly graduate-level profession. The department no longer offers the baccalaureate degree in rehabilitation services, but continues to offer the undergraduate courses in rehabilitation services in interdisciplinary cooperation with other majors.

**Pathways.** Pathways, initiated in the spring of 1996, is a unique interdisciplinary program concentration designed for students from a wide variety of academic departments who are interested in pursuing alcohol and drug rehabilitation studies. A sequence of recommended courses is offered to students who are majoring in psychology, criminal justice, social work, pharmacy, nursing, rehabilitation counseling and other academic and professional disciplines. The sequence of course work depends upon the level of intensity sought by the student, and it may range from only a single introductory course to a complete specialization. Pathways enables students to select a curricular path which matches their substance abuse rehabilitation interest regardless of their discipline. The program is available to undergraduates and is arranged in collaboration with the student's major adviser and/or the director of the rehabilitation substance abuse counselor education concentration.

## Graduate education

**Master of science in rehabilitation counseling.** The master of science in rehabilitation counseling prepares students to become certified

rehabilitation counselors who provide direct professional service and administrative leadership in agencies and organizations involved with mental and physical disabilities. Admission is based on an applicant's suitability for a career in rehabilitation counseling, and other factors such as emotional maturity, previous work experience, scholarship, recommendations and a personal interview. For further details on admissions and the program, see the Graduate Bulletin.

**Advanced certificate in professional counseling.** The advanced certificate in professional counseling is designed to help students fulfill the post master's requirements for the licensed professional counselor credential in Virginia and other states. The additional training also helps students to achieve national certification in such counseling specialties as rehabilitation, mental health, marriage and family, and alcohol and drug abuse. For further details on admissions and the program, see the Graduate Bulletin.

## Courses in rehabilitation services (RHAB)

Courses in rehabilitation services provide a basic understanding of people with mental, physical, cognitive and sensory disabilities and how to help them lead more productive lives. The courses are not only relevant to future graduate study in the profession of rehabilitation counseling, but to a number of other rehabilitation related professions such as clinical and counseling psychology, social work, special education, corrections, therapeutic recreation, occupational therapy, physical therapy and so forth.

Courses are offered in substance abuse rehabilitation at the undergraduate level to prepare the student to meet eligibility requirements for state and national substance abuse counselor certification, but are also available as elective credit which can be applied toward fulfilling degree requirements or meeting continuing education needs.

One honors course is included in the University Honors Program in RHAB 202 General Substance Abuse Studies. Interested students should contact the University Honors Program office for further information.

### RHAB 201 Introduction to Rehabilitation Services.

Semester course; 3 lecture hours. 3 credits. This course has been designed to expose the student to the history and development of the rehabilitation movement. Topics explored include basic concepts and philosophies of rehabilitation, psychological and vocational adjustments of the disabled, and an examination of selected rehabilitation methods.

### RHAB 202 General Substance Abuse Studies.

Semester course; 3 lecture hours. 3 credits. This course is designed to help the student develop an appreciation of society's attitude about the use of drugs and alcohol, and each individual's responsibility in decisions about the use of drugs. Discussion is offered on specific characteristics of drugs, how addiction occurs, and role of rehabilitation after addiction.

### RHAB 321 Introduction to Substance Abuse.

Semester course; 3 lecture hours. 3 credits. Prerequisite: RHAB 202. Introduction to substance abuse as a progressive family disease with consideration of basic contributing factors (physiological, psychological, and sociocultural builds on foundation established in RHAB 202); exposure to multidisciplinary rehabilitative approaches to arresting the disease, as well as some knowledge of intervention; brief mention of the highlights of the continuum of care available in the recovery process.

### RHAB 452 Crisis Intervention with the Substance Abuser.

Semester course; 3 lecture hours. 3 credits. Prerequisites: RHAB 321, 322, 523, or permission of instructor. Focus on the application of concepts discussed in theory in the recovery process course; sharing of difficulties and successes with crisis intervention by individuals already in the field; provision of new and more refined techniques under the direction of experts demonstrating their applicability.

### RHAB 495 Practicum in Rehabilitation.

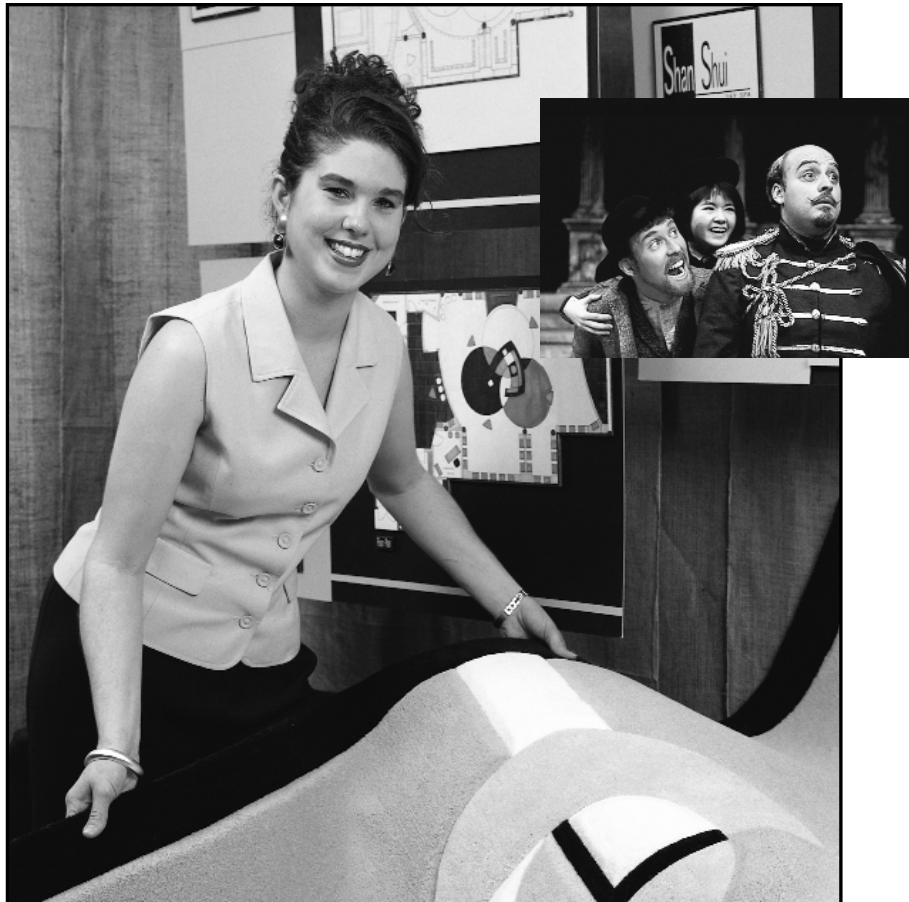
Semester course; 3 credits. Prerequisite: Permission of instructor. Designed to provide opportunities for observation and participation in rehabilitation and related settings. Experiences are systematically related to theoretical concepts.

# School of the Arts

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## Undergraduate Programs and Specializations

- Art Education B.F.A.
- Art History B.A., B.F.A.
  - art historical
  - art historical/studio
  - architectural history
  - museum studies
- Communication Arts and Design B.F.A.
  - art direction
  - digital imaging
  - graphic design
  - illustration
  - interactive multimedia design
  - kinetic imagery
  - multidisciplinary studies
  - three-dimensional modeling
  - three-dimensional design
  - typographic design
- Crafts B.F.A.
  - ceramics
  - fiberwork/fabric design
  - glassworking
  - metalsmithing/jewelry
  - woodworking/furniture design
- Dance and Choreography B.F.A.
- Fashion Design and Merchandising B.A., B.F.A.
  - design
  - home fashions
  - merchandising
- Interior Design B.F.A.
- Music B.A., B.M.
  - composition
  - music education
  - performance
- Painting and Printmaking B.F.A.
- Photography and Film B.F.A.
- Sculpture B.F.A.
- Theatre B.F.A.
  - design/technical
  - performance
  - theatre education

**Offering nationally top-ranked programs, the School of the Arts is devoted to preparing its students to enliven and enrich literacy in the visual and performing arts. The school's location allows students to take advantage of comprehensive resources such as museums and local theaters as well as professionally active faculty.**

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**Dr. Richard E. Toscan**

Dean and Professor of Theatre (1996)  
B.A. 1963 Purdue University  
M.A. 1964 University of Illinois, Urbana-Champaign  
Ph.D. 1970 University of Illinois, Urbana-Champaign

**Thomas H. DeSmidt**

Associate Dean for Academic Administration and  
Professor of Painting and Printmaking (1971)  
A.A. Lincoln College  
B.F.A. Layton School of Art  
M.F.A. 1970 Syracuse University

**John T. Bryan**

Associate Dean for Sponsored Research and  
Development and Assistant Professor of Art (1981)  
B.S. Davidson College  
M.A. George Peabody College  
M.F.A. 1975 City College of New York

**Paul E. Petrie**

Associate Dean for Academic Affairs and  
Professor of Interior Design  
and Director, Shaqab College of Design Arts (1984)  
B.I.D. University of Manitoba  
M.F.A. 1976 Syracuse University

**Michael Drought**

Director of Graduate Studies and  
Off-Campus Programs and Associate Professor  
of Painting and Printmaking (1975)  
B.S. University of Wisconsin, Madison  
M.F.A. 1973 University of Wisconsin, Madison

**Nancy M. Scott**

Acting Assistant Dean and  
Associate Dean, Shaqab College of Design Arts and  
Assistant Professor of Fashion Design  
and Merchandising (1992)  
B.F.A. Virginia Commonwealth University  
M.Ed. 1996 Virginia Commonwealth University

**Lydia C. Thompson**

Assistant Dean for Undergraduate Studies and  
Assistant Professor (1990)  
B.F.A. 1983 Ohio State University  
M.F.A. 1985 New York State College of Ceramics

**Ted Potter**

Director, Anderson Gallery  
and Associate Professor (1997)  
B.F.A. Baker University  
M.F.A. 1961 California College of Arts and Crafts

Two years later, a one-faculty art department was born under the guiding hand of Miss Theresa Pollak. Since then the school has grown to its present stature, achieving national and international recognition through its quality programs in visual and performing arts.

The Shaqab College of Design Arts is a new School of the Arts campus located in Doha, Qatar, situated on the western coast of the Arabian Gulf. Shaqab College is a joint venture between VCU School of the Arts and the Qatar Foundation for Education, Science and Community Development and enrolled its first students in fall 1998. Its purpose is to provide special educational opportunities and leadership roles in the design professions. The college offers students the chance to earn a bachelor of fine arts degree in communication arts and design, fashion design and merchandising, or interior design. Courses emulate those offered on VCU's Academic Campus with School of the Arts faculty teaching most of these courses. Graduates are educated for exciting careers in these growing design professions.

In 1969, the Department of Dramatic Art and Speech and the School of Music, until that time independent departments within VCU, combined with the School of Art to form the present School of the Arts.

The visual arts programs of the school are accredited by the National Association of Schools of Art and Design. The Department of Dance and Choreography is accredited by the National Association of Schools of Dance, the Department of Music by the National Association of Schools of Music, the Department of Interior Design by the Foundation of Interior Design Education Research, and the Department of Theatre by the National Association of Schools of Theatre. Many of the undergraduate and graduate programs are ranked among the leading arts and design schools in the nation.

The School of the Arts offers distinctly professional programs in which students devote the greater portion of each day to professional courses in the arts. As part of a metropolitan university, art students are provided with the advantages of comprehensive facilities, as well as professionally competent faculty. It is the only state-supported professional school of the arts in the South,

and one of the few in the country offering a professional curriculum within a combined academic and professional environment.

The purpose of the School of the Arts is to enliven and enrich literacy in the visual and performing arts through the advanced thought and perception of its students and faculty. It intends to develop innovative approaches to the making and comprehension of works of art which elaborate on the complexities of contemporary people. These works of art clarify and give meaning to the uncertainty of the human condition. Two of the major objectives of the school are to sustain inquiry into the nature of being and becoming, and to strengthen the artistic process and products that reflect that inquiry.

Each department within the school contributes to meeting these objectives by encouraging students to approach and resolve aesthetic, intellectual and technical problems with scholarly analysis, experimentation, informed discrimination and environmental awareness. In short, the School of the Arts stimulates students to develop a highly professional attitude toward their work and to solve significant creative problems.

## Degree programs

Baccalaureate programs within the School of the Arts prepare creative people for careers in the visual and performing arts. The school emphasizes the development of individual competencies in the arts through the following departments:

- Art Education
- Art History
- Communication Arts and Design
- Crafts
- Dance/Choreography
- Fashion Design and Merchandising
- Interior Design
- Music
- Painting and Printmaking
- Photography and Film
- Sculpture
- Theater

The School of the Arts offers graduate programs culminating in the master of fine arts, master of art education, master of arts, and master of music with major and minor concentrations in various departments. Detailed information on

The School of the Arts at Virginia Commonwealth University began in 1926 as a single course offered in sculpture.

these programs appears in the Graduate Bulletin.

### Transfer students

Departmental faculty committees determine placement in all upper-level courses after evaluating the student's record, performance, audition and/or creative work. The student should contact the appropriate department chair at the time of acceptance to arrange for this evaluation before actual enrollment.

### Special charges

All full-time majors enrolled in the School of the Arts are charged a \$150 comprehensive fee each semester; part-time students are charged a \$75 fee per semester. The money is prorated to the individual departments which determine the expenditures, resulting in a rebate to the students through materials, services and/or equipment, and may include models, field trips or special lectures. Students enrolled in any of the numerous courses which require an additional outlay for materials will be billed for those individual fees by the Office of Student Accounting.

### Internships and cooperative education

The School of the Arts encourages qualified students to enter into limited and carefully selected internship arrangements. To assist students, departments and programs are encouraged to identify, evaluate and select internship arrangements that will expand and complement the scope of the student's educational experience, and support the university's, the school's and the department's or program's mission.

Internship arrangements are coordinated by the individual department or program and are considered university-supported activities involving enrolled students and faculty. All participants in such arrangements are subject to all applicable university policies and procedures. These policies and procedures include, but are not limited to, conflict of interest, intellectual properties, faculty rights and responsibilities and those policies and procedures outlined in the VCU Resource Guide.

While the School of the Arts encourages student internship arrangements,

it disallows student internship arrangements when family members serve in a supervisory capacity. Should such an internship arrangement become an option, the approval of the dean must be received prior to completing any final agreement.

The School of the Arts also participates in the Cooperative Education Program. Qualifying students can take part in this program through most departments. A full description of the program appears in Part XX of this bulletin.

### Academic requirements

All majors in the School of the Arts must earn a minimum grade of "C" in all major work in order to remain in their departments.

The department and the student's adviser periodically evaluate the record of each student. If, at any time during undergraduate studies, the department faculty concludes a student is not demonstrating adequate progress in the area of concentration, the student will be advised to withdraw from that department.

### General education requirements

The School of the Arts is committed to educating students about the role of the artist in a complex, ever-changing world. Graduates are prepared to become responsible, productive artist-citizens who will make meaningful contributions to their discipline and to society. The university-based professional school provides students with rich, varied educational experiences that will acquaint them with new ideas and with the breadth of knowledge to successfully face the challenges and changes the future will bring. The appreciation for lifelong learning is inherent in the education of the artist.

Students in the School of the Arts develop mastery of their chosen field of study by concentrated immersion within their specialty. The university commitments and curricular elements form the framework upon which this discipline-oriented education is based and are interwoven throughout the curricula of the departments. Each department addresses university commitments and curricular elements to best satisfy the needs of students within the major and has identified content areas outside of

the school which must be successfully completed by all students in the school. In addition, the individual departments have allocated varying numbers of general education electives for students to achieve personal and professional goals. Students have the opportunity to choose from a wide variety of courses or may focus within a specific area and develop a minor.

The School of the Arts faculty have developed general education expectations for students. These reflect the four university commitments and seven curricular elements amplified to reflect the baccalaureate degrees offered by the School of the Arts.

#### 1. Communicating

Students should understand the basic construction of our language and be able to express themselves coherently in writing and through speech. They should understand the professional language of their discipline and be able to communicate this clearly.

1.1 All students will successfully complete university-level equivalency of ENGL 101, ENGL 200 Composition and Rhetoric I and II. This course work emphasizes reading and writing.

1.2 All students will complete at least two courses which emphasize writing and are designated WI (writing intensive).

1.2.1 At least one required course, within the student's major, will have a writing emphasis that meets the "Writing Emphasis Guidelines" of the School of the Arts. Discipline-oriented writing intensive course work may include the preparation of research reports and term papers, written critical reviews, journals and other vehicles that allow the student to form abstract concepts into written language. This work will be critiqued from both a technical and writing standpoint with the opportunity to be redone to meet the standards of written communication needed for the profession.

School of the Arts discipline-oriented courses that have a writing emphasis and designated WI (writing intensive) include:

ARTE 311 Concepts of Art Education II: Curriculum and Instructional Procedures  
ARTE 401 Concepts of Art Education III: Elementary Materials and Practicum  
ARTE 402 Concepts in Art Education IV: Secondary Materials and Practicum  
ARTH 455 Aesthetics and Modern Theories of Art  
ARTH 497 Directed Research Project  
CARD 239 Media Presentation  
CARD 412 Typography III  
CARD 424 Visual Journalism in Illustration  
CRAF 482 Senior Seminar

DANC 107 Contemporary Dance Perspectives  
 DANC 308 Dance History  
 DANC 313 Dance in World Cultures  
 FASH 319 20th Century Fashions  
 IDES 251 History of Interior Environments  
 IDES 431 Business Practices  
 MHIS 421, 422 Music History  
 PAPR 490 Senior Seminar  
 SCPT 491 Topics in Sculpture  
 THEA 211-212 Introduction to Drama  
 THEA 361-362 Directing

1.2.2 Any additional course identified by the WI designation will satisfy the requirement for a second writing intensive course. (Refer to the current Schedule of Classes).

1.3 All students will participate in oral communication experiences that will help them develop the skills to speak effectively. Oral communication experience can be achieved by students preparing and presenting verbally to an audience. This may include presentation and defense of work in a critique or jury forum, presentation of prepared work in a class setting, and other vehicles that provide the student opportunities to develop skills that support the ability to speak with a level of ease in front of a group of people.

Within the School of the Arts' majors the following courses satisfy the requirement for oral communications experience:

APPM 299 Master Class  
 ARTE 311 Concepts in Art Education II: Curriculum and Instructional Procedures  
 ARTE 401 Concepts in Art Education III: Elementary Materials and Practicum  
 ARTE 402 Concepts in Art Education IV: Secondary Materials and Practicum  
 Art history upper division period courses  
 CARD 212 Communication Design I: Form and Communication  
 CARD 239 Media Presentation  
 CARD 423 Editorial Illustration  
 Crafts: all Crafts studio courses  
 DANC 303-304 Choreography/Performance  
 FASH 205-206 Fashion Drawing I  
 Interior Design: all Interior Design studio courses  
 IDES 431 Business Practices  
 PAPR 305 Painting, Intermediate  
 Sculpture: all Sculpture studio courses  
 SPCH 121 Effective Speech

## 2. Ethics

Students should understand and appreciate a system of values upon which rests their professional and personal conduct. They should be able to examine fundamental moral beliefs and form rational ethical arguments, judgments and choices.

2.1 Option 1: The study of ethics permeates courses within each major in the School of the Arts. Additionally students will study units in selected courses that provide a basis upon which to make ethical professional choices.

School of the Arts courses that satisfy the ethics requirement:

ARTE 310 Foundations in Art Education  
 ARTE 401 Concepts in Art Education III: Elementary Materials and Practicum  
 ARTE 402 Concepts in Art Education IV: Secondary Materials and Practicum  
 ARTF 107 Introduction to the Arts  
 ARTH 355 Symbolic Expression in the Visual Arts  
 ARTH 438 The Roots of Modernism  
 ARTH/WMNS 457 Women, Art and Society  
 ARTH 469 Studies in Museum Methods  
 ARTH 493 Museum Internship  
 CARD 356 Studio Management  
 IDES 201 Interior Design Studio  
 IDES 431 Business Practices  
 MUED 290 Music in General Education  
 MUED 391 Processes of Music Education  
 SCPT 211, 212 Sculpture  
 SCPT 311, 312 Sculpture  
 SCPT 411, 412 Sculpture  
 THEA 113-114 Acting I

Option 2: Students may complete designated ethics courses offered outside of the school.

The following courses can be taken to fulfill the ethics requirement:

PHIL 211 History of Ethics  
 PHIL 212 Ethics and Applications  
 PHIL 327 Ethical Theory  
 POLI 341 History of Political Thought  
 RELS 340 Global Ethics and the World's Religions  
 With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

## 3. Quantity and form

Students should be able to effectively apply codified information to resolve questions of quantity and form, especially as related to their discipline.

3.1 Within the major, students will be provided with information necessary for them to solve the questions relating to "Quantity and Form" that are specific to their field of study.

3.2 Option 1: Students may complete courses that will further develop logical thinking and the ability to understand quantitative processes.

Recommended courses that fulfill this requirement are:

MATH 131 Introduction to Contemporary Mathematics  
 STAT 208 Statistical Thinking  
 Other mathematics or statistics credit courses may be used to fulfill this requirement.

With approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

Option 2: Competency in "Quantity and Form" may be recognized based on a student's secondary record or standardized test results prior to enrolling at the university.

Secondary-level course work that fulfills this requirement includes the completion of Algebra II or Geometry with a minimum grade of "B," or

Standardized test scores that fulfill this requirement are a SAT score of 550 or higher or the equivalent score on a comparable standardized test.

## 4. Science and technology

Students should understand the importance that science and technology play in modern society and, in particular detail, those applications that have direct impact on their field of study.

4.1 Within each major, students will be taught about scientific data that impacts their field of study and how to analyze, understand, and apply this information.

4.2 All students will be required to complete one course in natural science having a laboratory component.

Recommended courses that satisfy the "Science and Technology" requirement include:

BIOL 101, 101L Life Science and Laboratory  
 BIOL 102, 102L Science of Heredity and Laboratory  
 BIOL/ENVS 103, 103L Environmental Science and Laboratory  
 CHEM 110 Chemistry and Society  
 CHEM 112 Chemistry in the News  
 DANC 407 Dancer as Teacher  
 ENVS/BIOL 103, 103L Environmental Science and Laboratory  
 GEOG 203, 203L Physical Geography and Laboratory  
 GEOG 204, 204L Physical Geography and Laboratory  
 PHED 382 Survey of Kinesiology and Physiology of Exercise  
 PHYS 101, 101L Foundations of Physics and Laboratory  
 PHYS 107 Wonders of Technology  
 PHYS 291 Topics in Physical Science

Other biology, chemistry, and physics courses may be used to fulfill this requirement.

With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

## 5. Interdependence

Students should be aware of the similarities and differences that exist among the communities of the world and develop an understanding of and an appreciation for diverse cultures within our country and beyond its borders.

5.1 Within the School of the Arts, curricula concepts related to interdependence and its impact on specific disciplines are presented in many courses.

Courses offered within the School of the Arts that satisfy this requirement are:

ARTF 105-106 Survey of World Art

ARTH 103/104 Survey of Western Art and

One course with non-Western focus:

ARTH 145, 146 Survey of Oriental Art

ARTH 207 Introduction to Non-Western Art

ARTH 335 Survey of Pre-Columbian Art and  
Architecture

ARTH/AFAM 342 African-American Art

ARTH/AFAM 350 African and Oceanic Art

ARTH 355 Symbolic Expression in the Visual Arts

ARTH/AFAM 358 African Art and Architecture

ARTH 449 Studies in Asian Art

DANC 313 Dance in World Cultures

MHIS 120 Introduction to Musical Styles

MHIS 321, 322 Music History

THEA 307-308 History of the Theatre

## 5.2 Elective courses offered outside of the school that support understanding of interdependence include:

AFAM/HIST 105, 106 Survey of African History

AFAM/ANTH 200 Introduction to African Societies

AFAM 204 Africa in Transition

AFAM/GEOG 333 Geography of Africa

AFAM/POLI/INTL 356 African Government and Politics

AFAM/POLI/INTL 357 Politics of Southern Africa

AFAM/POLI 387 History of West Africa

AFAM/POLI 389 History of Southern Africa

ANTH 103 Cultural Anthropology

ANTH 301 The Evolution of Man and Culture

ANTH/SOCY/WMNS 304 The Family

ANTH 305 Comparative Society

ANTH/INTL 350 Peoples and Cultures of the World

ANTH 425 Religion, Magic, and Witchcraft

EUCU 307 Aspects of German Culture

EUCU 345/INTL 345/URSP 350 Culture and Urbanism  
in Great Cities of the World

FREN 320 and 321 French Civilization and Culture I  
and II

GEOG 307, 308 World Regions

GRMN 320 and 321 German Civilization I and II

HIST 109, 110 Survey of Latin American History

HIST 315, 316 History of France

HIST 317, 318 History of Germany

HIST 319, 320 History of England

HIST 321, 322 History of Russia

HIST 323 History of Spain and Portugal

HIST 328 Modern Middle East

HIST 378 History of Central America

HIST 384 Latin America and World Affairs

HIST 385 History of Mexico

HIST 386 History of Brazil

PHIL 103 Ancient Greek and Medieval Western  
Philosophy

PHIL 104 Modern Western Philosophy

PHIL/RELS 408 The Indian Tradition

PHIL/RELS 410 The Chinese Tradition in Philosophy

PHIL/RELS 412 Zen Buddhism

POLI 351 Governments and Politics of the Middle East

POLI 353 Latin American Governments and Politics

POLI 355 Asian Governments and Politics

POLI 452 Seminar in the Politics of Developing Areas

RELS 304 Introduction to Judaism

RELS 311 World Religions

RELS 320 Taoism

RELS 331 Christianity and Culture

RELS 407 Modern Jewish Thought

SPAN 306 The Civilization of Spain

SPAN 307 Latin American Civilization

Foreign language literature in English translation or in the original language also satisfy the interdependence requirement.

With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

## 6. Visual and performing arts

Students should have appreciation for the contribution of the visual and performing arts to the enhancement of the quality of life. Each student who graduates from the School of the Arts will have achieved proficiency in at least one discipline within the School of the Arts.

## 7. Humanities and social sciences

Students should have experience with courses that broaden the mind and expand consciousness through the study of social sciences and humanities.

7.1 Students will successfully complete at least three credits of course work in the social sciences and successfully complete at least three credits in the humanities, and successfully complete a minimum of six credits of course work in art history, history of dance, music history, theatre history, or other courses related to the history of arts in the world.

### 7.1.1 Social sciences

AFAM/SOCY 105 Sociology of Racism

AFAM/ANTH/URSP 200 African Culture

AFAM/POLI 302 Politics of the Civil Rights Movement

AMST 301 Introduction to Native American Studies

AMST 323 Social Attitudes in the Humanities

ANTH 103 Cultural Anthropology

ANTH 200 African Studies

ANTH 252 The Archeology of Richmond

ANTH/HIST 311 History of Human Settlement

ANTH 386/ENGL 383 Introduction to Folklore

History designation in the current Schedule of Classes

POLI 103, 104 U.S. Government

POLI 201 Introduction to Politics

POLI 202 Comparative Politics

POLI 203 International Relations

POLI 303 Political Attitudes and Behavior

POLI 310 Public Policy

POLI 311 Politics of the Environment

POLI/WMNS 318 Politics of Race, Class and Gender

POLI 321 Urban Government and Politics

POLI 344 Contemporary Political Theory

POLI 352 European Governments and Politics

POLI 353 Latin American Governments and Politics

POLI 354 Politics of the Former Soviet Union

POLI 355 Asian Governments and Politics

POLI 356 African Governments and Politics

POLI 362 Issues of World Politics

PSYC 101 Introduction to Psychology

SOCs 291 Issues in Social Science

SOCs 340 Human Sexuality

SOCs 350 The Construction of Culture

SOCY 101 General Sociology

SOCY 302 Contemporary Social Problems

SOCY 340 Self and Society

URSP 304 Urban Social Systems

URSP 315 The Evolution of American Cities

URSP 316 Urban Life in Modern America

URSP 340 Urban Habitat

WMNS/PSYC 335 Psychology of Women

### 7.1.2a Humanities

AFAM/HIST 105, 106 Survey of African History

ECON 101 Introduction to Political Economy

ECON 203 Introduction to Economics

EDUS 200 Education in American Society

EDUS 301 Human Development and Learning

EDUS/PSYC 305 Educational Psychology

GEOG 102 Introduction to Cultural Geography

GEOG 207, 208 World Regions

GEOG 322 World Political Geography

GEOG 451 Cultural Geography of Virginia Literature\*

PHIL 101 Introduction to Philosophy

PHIL 103 Ancient Greek and Medieval Western

Philosophy

PHIL 104 Modern Western Philosophy

PHIL 211 History of Ethics

PHIL 212 Ethics and Applications

PHIL 221 Critical Thinking

POLI 341, 342 History of Political Thought

RELS 311, 312 Religions of the World

RELS 340 Global Ethics and the World's Religions

\* Literature courses include literature in English, or foreign literature in English translation, or foreign literature in the original language.

### 7.1.2b Humanities, history of arts in the world

ARTF 105-106 Art History Survey

ARTH (all courses)

CARD 252 20th Century Visual Communications I

CARD 253 20th Century Visual Communications II

DANC 107 Dance Perspectives

DANC 308 Dance History

DANC 313 Dance in Non-Western Cultures

FASH 319 20th Century Fashions

IDES 251 History of Interior Environments

MHIS 120 Introduction to Musical Styles

MHIS 271 Jazz History and Literature

MHIS 421-422 Survey of Music History

THEA 307-308 History of the Theatre

THEA 309-310 History of Costumes

With the approval of the student's adviser, a course not listed that fulfills the spirit of this requirement may be substituted.

## School of the Arts recommended general education courses for non-School of the Arts majors entering fall 1997 and thereafter

The following courses will satisfy the "Visual and Performing Arts" general education requirement for non-art majors. Consult an adviser for assistance in selecting courses that will best fulfill degree requirements.

### A. Basic level courses designed specifically for non-arts majors.

- Art education
  - ARTE 121-122 The Individual in the Creative Process
  - ARTE 301-302 Art for Elementary Teachers
  - ARTE 408 Two-Dimensional Art Experiences
  - ARTE 409 Three-Dimensional Art Experiences
- Art foundation
  - ARTF 121-122 Introduction to Drawing
- Communication arts and design
  - CARD 191 Studio Topics in Communication Arts and Design
- Dance/choreography
  - DANC 171, 172 T'ai Chi
  - DANC 183-184 Introduction to Modern Dance Technique
  - DANC 313 Dance in World Cultures
- Interior design
  - IDES 103-104 Introductory Studio Course
- Music
  - APPM 191-192 Class Lessons in Piano
  - APPM 193-194 Class Lessons in Voice
  - APPM 195-196 Class Lessons in Guitar
  - MUSC 111 MIDI Programming and Synthesis
  - MHIS 105-106 Introduction to Writing Music
  - MHIS 243 Music Appreciation
- Painting and printmaking
  - PAPR 155-156 Drawing and Painting, Basic
- Photography and film
  - PHTO 243-244 Photography
- Theatre
  - THEA 107, 108 Introduction to Stage Performance

### B. Basic level courses open to both arts and non-arts majors.

- Art education
  - ARTE 353 Art and Perceptual Communication
- Art foundation
  - ARTF 101-102 Communication and Presentation
- Art history
  - ARTH 103, 104 Survey of Western Art
  - ARTH 145, 146 Survey of Oriental Art
  - ARTH 207 Introduction to Non-Western Art
  - ARTH 270, 271 History of the Motion Picture
- Crafts
  - CRAF 201-202 Metalsmithing
  - CRAF 211-212 Jewelry

- CRAF 221 Woodworking Techniques
- CRAF 241 Ceramics: Handbuilding
- CRAF 242 Ceramics: Wheelthrowing
- CRAF 251, 252 Introduction to Glassworking
- CRAF 261, 262 Beginning Textiles
- Dance/choreography
  - DANC 105-106 Improvisation
  - DANC 107 Contemporary Dance Perspectives
  - DANC 111-112 Ballet Technique I
  - DANC 114, 214, 314, 414 Summer Dance Workshops
  - DANC 121, 122/AFAM 121, 122 Tap Technique I
  - DANC 126, 127/AFAM 126, 127 African-Caribbean Dance I
  - DANC 141, 142 Ballroom Dancing
  - DANC 243 Dynamic Alignment
  - DANC 291 Topics in Dance
  - DANC 308 Dance History
  - DANC 313 Dance in World Cultures
- Fashion design and merchandising
  - FASH 290 Textiles for the Fashion Industry
  - FASH 319 20th Century Fashions
- Music
  - APPM 300-level Private Instruction: Principal and Secondary Performing Mediums
  - APPM 370 Large Ensembles (auditions required for some sections)
  - APPM 390 Small Ensembles (auditions required for all sections)
  - MUSC 112 Synthesizer and Composition
  - MHIS 120 Introduction to Musical Styles
  - MHIS 250/AFAM 250 Introduction to African-American Music
  - MHIS 280 Survey of 20th Century American Popular Music
- Photography and film
  - PHTO 233 Media Arts Survey
- Sculpture
  - SCPT 211, 212 Sculpture
- Theatre
  - THEA 103 Stagecraft
  - THEA 104 Costume Construction
  - THEA 211-212 Introduction to Drama
  - THEA 221 Basic Scene Design/THEA 221L Basic Scene Design Laboratory
  - THEA 229 Introduction to Lighting Design
  - THEA 303/AFAM 303 Black Theatre

### C. Advance level courses open to both arts and non-arts majors.

- Some require special permission/audition.
- Dance/choreography
  - DANC 221, 222 Tap Technique II
  - DANC 319, 320 Video/Choreography Workshop
  - DANC 343 Body Imagery
- Sculpture
  - SCPT 491 Topics in Sculpture

## General information

Students who have matriculated in a professional curriculum receive

enrollment preference for courses in their program. However, unless otherwise indicated, all courses are open to any student in the university.

Because of the sequence in which course work is arranged, only transfer students will be considered for mid-year admission. With the exception of art history classes, all courses must be taken in their numerical sequence unless approved by the chair of the department in which they are listed.

In many of the courses, a considerable amount of work is done outside the classroom. This work is done in addition to the work done in the scheduled classes students are required to attend. Departments within the school reserve the right to retain examples of student work for permanent collections. Before enrollment, students should contact the appropriate department chair for a more detailed curriculum outline than that which appears in this bulletin.

## Undergraduate credit by examination

Recognizing that VCU enrolls students of varying backgrounds and experiences, the School of the Arts provides its students the opportunity to accelerate their education through "credit by examination." The conditions under which credit by examination may be given and the procedures are outlined in Part II of this bulletin.

## Honors program

The University Honors Program was established to attract gifted students and to provide them with a challenging opportunity to achieve their highest academic potential. This program is open to all qualified undergraduate students. For a detailed description of qualifications and requirements see Part VII of this bulletin.

## 500-level courses

500-level courses are available only to upper division undergraduate students with the approval of the chair of the department in which the course is offered.



## Courses in arts (ARTS)

Unless otherwise indicated, courses must be taken in numerical sequence.

### ARTS 001 Open Studio Workshop.

Semester course; hours to be arranged. No credit.

### ARTS 190 Advanced Workshop, Drawing.

Semester course; 1 lecture and 6 studio hours. 3 credits. Must be taken concurrently with ARTS 191 and 192. Special summer workshop in drawing for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Students are admitted only by invitation of the dean of the School of the Arts.

### ARTS 191 Advanced Workshop, Design.

Semester course; 1 lecture and 9 studio hours. 4 credits. Must be taken concurrently with ARTS 190 and 192. Special summer workshop in design for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Students are admitted only by invitation of the dean of the School of the Arts.

### ARTS 192 Advanced Workshop, Art History.

Semester course; 2 lecture hours. 2 credits. Must be taken concurrently with ARTS 190 and 191. Special summer workshop in art history for the freshman applicant whose work shows potential worthy of consideration for advanced placement in September. Students are admitted only by invitation of the dean of the School of the Arts.

### ARTS 370, 371 Topics in Art.

Semester courses; 3 lecture or 9 studio hours (or combinations thereof). 3, 3 credits. An in-depth study of a selected topic in art. See the Schedule of Classes for specific topics to be offered each semester.

### ARTS 392 and 492 Independent Study.

Semester courses; 3-18 studio hours. 1 to 6 credits. Prerequisite: Consent of department head and instructor. The student must be enrolled in a regularly scheduled 300-level studio course. Offered to School of the Arts majors only. This course will be limited to those few students who have demonstrated an unusual level of ability and intense commitment to a particular area.

### ARTS 430 Guided Study Afield.

1-9 credits. Prerequisite: Permission of instructor required. Designed to enhance the student's knowledge by providing first-hand experience with the most significant contribution of aesthetic import within the geographic areas traveled.

## Art Foundation Program

### Dennis H. Rexroad

Associate Professor and Director (1989)  
B.F.A. 1965 Southwest Missouri State University  
M.F.A. 1968 Kansas University

All beginning and transfer students in the visual arts, when necessary,

must enroll in the Art Foundation Program. This program is the prerequisite, providing the basic concepts, skills and experiences necessary for admittance to advanced professional studio work in each department.

Students accepted and placed in the Art Foundation Program do not achieve departmental affiliation until after the screening of portfolios during the spring semester of the freshman year. At that time the student can apply to the department of his or her choice. Departmental acceptance is based on individual student performance and competency in the chosen area.

Art foundation curriculum	Credits	
	1st Sem.	2nd Sem.
Studios		
ARTF 101-102 Conceptualization and Presentation	2	2
ARTF 103-104 Design Fundamentals	2	2
ARTF 109-110 Drawing Fundamentals	2	2
ARTF 111-112 Drawing Studio	2	2
General studies		
ARTF 105-106 Survey of World Art	4	4
ARTF 107 Introduction to the Arts	1	
ENGL 101 Composition and Rhetoric	3	
Academic elective		3
	16	15

## Courses in art foundation (ARTF)

### ARTF 101-102 Conceptualization and Presentation.

Continuous course; 1 lecture and 3 studio hours. 2-2 credits. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with the emphasis on conceptualization, sensing, and knowing. This course includes studies in preconceptions, value systems, visual semantics, attitudes, criticism, and analysis of visual phenomena. This course also is an introduction to the concepts of the third and fourth dimensions and the nature of materials.

### ARTF 103-104 Design Fundamentals.

Continuous course; 1 lecture and 3 studio hours. 2-2 credits. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with emphasis on systems and nonsystems of spatial order, as well as color applications and theory.

### ARTF 105-106 Survey of World Art.

Continuous course; 4 lecture hours. 4-4 credits. For beginning students in the School of the Arts only. A survey of the history and development of painting, sculpture, architecture, and related visual arts of major world cultures, including European, American, Oriental, African, Islamic, and pre-Columbian.

### ARTF 107 Introduction to the Arts.

Semester course; 1 lecture hour. 1 credit. For beginning students in the School of the Arts. Offered to art majors only. An orientation course designed to provide a comprehensive understanding of the role of the visual arts within the university and as a significant contributing factor in the creation of a meaningful human environment.

### ARTF 109-110 Drawing Fundamentals.

Continuous course; 1 lecture and 3 studio hours. 2-2 credits. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with the emphasis on traditional drawing, including perspective, anatomy, and artistic judgment.

### ARTF 111-112 Drawing Studio.

Continuous course; 1 lecture and 3 studio hours. 2-2 credits. For beginning students in the School of the Arts. Offered to art majors only. A foundation course with the emphasis on the formal and conceptual nature of drawing. This course is designed to challenge and develop the student's invention and imagination.

### ARTF 121-122 Introduction to Drawing.

Continuous course; 1 lecture and 3 studio hours. 2-2 credits. Not for art majors. An introduction to the fundamentals of freehand drawing with an emphasis on representational drawing skills, perception, and traditional drawing materials. Does not fulfill Art Foundation Program core requirements.

## Department of Art Education

### Charles F. Bleick

Associate Professor and Chair (1976)  
B.A. California State University, Chico  
M.A. California State University, Chico  
Ph.D. 1979 University of North Texas

Burton, David E. (1977) Associate Professor  
B.F.A. 1967 Syracuse University  
M.A. 1970 New York University  
Ph.D. 1973 Pennsylvania State University  
Manifold, Marjorie Cohee (1999) Assistant Professor  
B.A. 1968 Indiana University  
M.A. 1989 Indiana University, Herron School of Art  
Ph.D. 1999 Indiana University  
Shumard, Sally L. (1995) Assistant Professor  
B.S. 1979 Miami University  
M.A. 1992 Ohio State University  
Ph.D. 1995 Ohio State University  
Wright, A. James (1980) Associate Professor  
B.S. 1964 Florida State University  
M.S. 1965 Florida State University  
Ed.D. 1972 Pennsylvania State University

### Emeriti faculty

Hynson, Priscilla C., Associate Professor Emerita  
B.S. East Carolina University  
M.A. George Peabody College  
Ed.D. George Peabody College

Tisinger, Betty H., Professor Emerita  
 A.B. Berea College  
 M.A. Madison College  
 D.Ed. Pennsylvania State University

The Department of Art Education offers an undergraduate program which leads to a bachelor of fine arts degree. The program gives the student the opportunity to specialize in art education while emphasizing a strong background in the arts to help the student develop artistic sensitivity, critical analysis, perception and interpretation of art forms. The program assists in developing expertise in the utilization of electronic media in an increasingly technological world.

The Art Education Program is an Approved Teacher Preparation Program that complies with the professional standards of the Virginia Department of Education and the Southern Association of Colleges and Schools. It is further accredited by the National Council for Accreditation of Teacher Education and the National Association of Schools of Art and Design. All of these agencies assure the highest professional program standards.

Most art education students enter the teaching profession and teach art in either elementary, middle or high school. Others pursue further education to work as art consultants, art therapists, arts administrators, museum personnel, college teachers, and in other art-related business positions. Graduates of the program are eligible for teacher licensure in PreK through grade 12. Reciprocity agreements with many states greatly expand job opportunities throughout the country.

### Admission

Any undergraduate student admitted to the School of the Arts and who has completed the Art Foundation Program (or the equivalent at another institution) is eligible to enter the program. Transfer students and students currently attending VCU must have a minimum GPA of 2.0 to enter the program; however, note the higher GPA requirement for admission to teacher preparation.

### Admission to teacher preparation

All students in the program, upon completion of 60 credits of undergraduate course work and prior to completion

of 90 hours, must be accepted for admission to the Art Teacher Preparation Program. To be accepted, a student must have a minimum GPA of 2.5. Admission to the Teacher Preparation Program is required for enrollment in practicum courses (ARTE 401 and 402).

#### Requirements

- 2.5 cumulative GPA or better.
- Completion of ARTE 310 and 311 with a combined GPA in those courses of 2.5 or better.
- Completion of six hours of English, three hours of math, four hours of laboratory science, and eight hours of art history.
- Passing scores on Praxis I.
- No record of a felony conviction.

### Student teaching

The B.F.A. degree in art education requires one full semester of student teaching. Applications for student teaching can be obtained in the School of Education's Office of Academic Services in Room 2087, Oliver Hall. Each student is placed in two different settings, one at the elementary level and one at the middle or high school level.

#### Requirements

- 2.5 cumulative GPA.
- 2.8 GPA in ARTE course work.
- Admission to the Art Teacher Preparation Program.
- Successful completion of all other required course work.
- Completed application and transcripts submitted by established deadlines.

#### Procedures

- Obtain application form from the School of Education's Office of Academic Services.
- Submit copies of transcripts and required statement to the department chair for review.
- Obtain approval from department chair.
- Submit completed application to the School of Education's Office of Academic Services by Oct. 1 for the following spring semester; by March 1 for the following fall semester.

### Teacher licensure

Upon completion of the bachelor of fine arts degree in art education and with the recommendation of the Department of Art Education and School of Education, students are eligible to receive initial teacher licensure from the Virginia State Department of Education. For additional information on licensure renewal, or add-on

endorsement, contact the Department of Art Education office. In Virginia, initial licensure requires successful completion of the Praxis Examinations. Applicants for initial licensure must take the Praxis I Examination and Praxis II Specialty Area Test in Art Education. Praxis I should be taken prior to application for admission to the Art Teacher Preparation Program; the specialty area examination should typically be taken in one's final semester.

Students should request that their Praxis I and Praxis II test scores be reported to VCU's School of Education and the Virginia Department of Education. Before a recommendation for licensure can be sent to the Teacher Licensure Division of the Virginia Department of Education, these test scores must be on file with the School of Education's Office of Academic Services.

An undergraduate degree holder in another field wishing to obtain teacher licensure in art should contact the Department of Art Education office.

### Degree requirements in art education

	Credits
Content area (44 credits)	
Foundation program studios	16
Studios and approved electives	27
Introduction to the Arts (or elective)	1
Professional education (39 credits)	
ARTE 201 Service Learning	1
ARTE 310 Foundations of Art in Education	3
ARTE 311 Curriculum and Instructional Procedure	3
ARTE 250 Computer Graphics in Art Education	3
ARTE 401 Elementary Materials and Practicum*	4
ARTE 402 Secondary Materials and Practicum*	4
EDUS 301 Human Growth and Development	3
ARTE 404 Student Teaching Seminar**	3
TEDU 485 Student Teaching - Elementary**	6
TEDU 486 Student Teaching - Secondary**	6
Special education elective	3
General studies (44 credits)	
Art history	11
ENGL 101, 200 Composition and Rhetoric I and II	6
Literature	3
MATH 131	3
Laboratory science	8
Social/behavioral science	3
American history	3
Humanities	3
Health and physical education	4

## Additional Requirements

- \* Passing score on Praxis I (Reading, Writing, Mathematics)
- \* Admission to Art Teacher Preparation Program (2.5 GPA is required)
- \*\* Approval to student teach (2.5 GPA is required)
- \*\* Passing score on Praxis II: Specialty Area (art education)

**Courses in art education (ARTE)****ARTE 121-122 The Individual in the Creative Process.**

Continuous course; 1 lecture, 1 seminar, and 2 studio hours. 3-3 credits. Not offered for credit to art majors. Analysis of creative processes via reflection on the self-in-action. Participation in art experiences as a means to the interpretation and enjoyment of art forms, and the implication of art for society. The course aims to increase perceptual openness, sensitivity to, and understanding of the artistic experience.

**ARTE 201 Service Learning in Educational Settings.**

Semester course; 2 laboratory hours. 1 credit. May be repeated for a total of three credits. Prerequisites: Completion of freshman year art foundation. A preparatory experience for students interested in teaching art as a profession. Students will work with school children in selected area schools.

**ARTE 250 Computer Technology in Art Education.**

Semester course; 2 lecture and 3 studio hours. 3 credits. For art education majors only. Students will gain competency in using a computer as a tool for creating electronic imagery, as a filtering mechanism for traditional media, and to develop teaching materials for the K-12 classroom. Scanning and the manipulation of images will be explored. The potential limitations and ethical issues related to new technologies in visual arts classrooms will be addressed.

**ARTE 301-302 Art for Elementary Teachers.**

Continuous course; 1 lecture, 1 seminar, and 2 studio hours. 3-3 credits. The nature of art and its function in the lives of individuals and society is considered in addition to materials and methods for guiding the visual expression of children.

**ARTE 310 Concepts of Art Education I: Foundations of Art in Education.**

Semester course; 3 lecture hours. 3 credits. For art education majors only or by approval of the department chair. An examination of art education within the curricular structure of educational programs. Students will develop an understanding of the historical, philosophical, and sociological foundations of art in education, including art education's development and current roles.

**ARTE 311 Concepts of Art Education II: Curriculum and Instructional Procedures.**

Semester course; 2 lecture and 3 studio hours. 3 credits. For art education majors only or by approval of the department chair. A study of the principles of learning, instruction, and curriculum in art education programs. Students will develop teaching competencies through micro-teaching experiences, analysis of instructional methods, and teaching styles. Writing intensive.

**ARTE 353 Art and Perceptual Communication.**

Semester course; 3 lecture hours. 3 credits. A study of the function of art as communicative media through the senses. Emphasis will be placed on the analysis of the principles of art and design that affect the perception of various art forms.

**ARTE 401 Concepts In Art Education III: Elementary Materials and Practicum.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: Admission to the Art Teacher Preparation Program. For art education majors only, or by the approval of the department chair. A preparatory experience with observation and participation in art programs in elementary grades and non-traditional settings prior to student teaching. This course explores art materials and techniques suitable for this level, examines developmental performance levels and analyzes evaluation methods appropriate for art. Writing intensive.

**ARTE 402 Concepts In Art Education IV: Secondary Materials and Practicum.**

Semester course; 3 lecture and 3 studio hours. 4 credits. Prerequisites: Admission to the Art Teacher Preparation Program. For art education majors only, or by approval of department chair. A preparatory experience with observation and participation in art programs in middle school, secondary school, and nontraditional settings prior to student teaching. This course explores art materials and techniques suitable for these levels, examines developmental performance levels, and analyzes evaluation methods appropriate for art. Writing intensive.

**ARTE 404 Student Teaching Seminar.**

3 seminar hours. 3 credits. For art education majors only. A seminar concurrent with student teaching which gives students an opportunity to discuss and evaluate their progress in teaching assignments and other related activities.

**ARTE 408 Two-Dimensional Art Experiences.**

Semester course; 1 seminar and 4 studio hours. 3 credits. Not offered for credit to art majors. The course explores the media, techniques, and concepts of drawing, painting, and printmaking.

**ARTE 409 Three-Dimensional Art Experiences.**

Semester course; 1 seminar and 4 studio hours. 3 credits. Not offered for credit to art majors. Exploration of sculptural concepts with three-dimensional materials such as wood, metal, clay, fiber, plaster, plastic, and glass.

**ARTE 450 Art for the Exceptional Student.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Open to all majors. A study of the unique characteristics of exceptional students as related to involvement in the arts. The course examines disabled, aged, gifted, talented, and other exceptional learners, and may include practicum and field experiences.

**ARTE 491 Special Topics.**

Semester course; variable credit. May be repeated for a maximum of nine credits with different content. A seminar and/or workshop offered on a variety of art education issues not included in the regular curriculum. See the Schedule of Classes for particular topics covered each semester.

**ARTE 501-502 Concepts in Art Education.**

Continuous course; 1 seminar and 4 studio hours. 3-3 credits. A sequence of studies organized around six major components: communications, expressive media, conceptual expression, teaching strategies, teacher-affective attributes, and self-managing abilities.

**ARTE 508 Two-dimensional Art Experiences.**

Semester course; 2 seminar and 3 studio hours. 3 credits. Not offered for credit for studio art majors. The course explores the media, techniques, and concepts of drawing, painting, and printmaking.

**ARTE 509 Three-dimensional Art Experiences.**

Semester course; 2 seminar and 3 studio hours. 3 credits. Not offered for credit for studio art majors. Exploration of sculptural concepts with three-dimensional materials such as wood, metal, clay, fiber, plaster, plastic, and glass.

**ARTE 520 Teaching Concepts Through the Arts.**

Semester course; 1 lecture, 1 seminar, and 3 studio hours. 3 credits. Open to all graduate students. Students will investigate and compare traditional and contemporary patterns of expression, develop experiential techniques for teaching concepts, and participate in a series of activities that reveal relationships among the arts and other subject areas. Seminars will include guests from the visual, performing, and literary arts.

**ARTE 550 Art for the Exceptional Learner.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. A study of exceptional learners including handicapped, gifted and talented, aged, and others, and their participation in and appreciation for the visual arts. Courses may include practicum and field experiences.

**ARTE 553 Art and Perceptual Communication.**

Semester course; 3 lecture hours. 3 credits. Explores art and perception as a means of effectively communicating through the senses. Emphasizes the analysis of the principles of art and design that affect the perception of art, advertising, and other media. Investigates light, color, perception, illusions, and other related topics.

**ARTE 591 Topics in Art Education.**

Semester course; variable credits from 1-3. May be repeated for a maximum of nine credits with different content. The course will explore selected topics of current interests or needs relative to art education. See Schedule of Classes for specific topic to be offered each semester.

**Department of Art History****Bruce M. Koplin**

Associate Professor and Chair (1964)  
B.F.A. 1961 Virginia Commonwealth University  
M.F.A. 1963 Virginia Commonwealth University

Brownell, Charles (1992) Professor

B.A. Oakland University  
M.A. University of Delaware  
Program on the Historic Houses of England Attingham

- Summer School  
 M.Phil. 1975 Columbia University  
 Ph.D. 1976 Columbia University
- Crowe, Ann G. (1989) Associate Professor  
 B.A. 1952 Duke University  
 M.A. 1971 University of Colorado  
 Ph.D. 1989 Stanford University
- Farmer, James D. (1992) Associate Professor  
 B.F.A. 1982 University of Texas, Austin  
 M.A. 1986 University of Texas, Austin  
 Ph.D. 1992 University of Texas, Austin
- Hill, Sharon Jones (1969) Associate Professor  
 B.A. 1959 Pennsylvania State University  
 M.A. 1962 Pennsylvania State University  
 Ph.D. 1973 New York University
- Hobbs, Robert C. (1991) Professor and Eminent Scholar  
 B.A. 1969 University of Tennessee, Knoxville  
 Ph.D. 1975 University of North Carolina, Chapel Hill
- Jacobs, Fredrika H. (1984) Associate Professor  
 B.A. 1975 Smith College  
 Ph.D. 1979 University of Virginia
- Lawal, Babatunde (1992) Professor  
 B.A. 1966 University of Nigeria  
 M.A. 1968 Indiana University, Bloomington  
 Ph.D. 1970 Indiana University, Bloomington
- Phillips, Richard E. (1995) Assistant Professor  
 B.A. 1973 University of California, Irvine  
 M.A. 1975 University of California, Santa Barbara  
 Ph.D. 1993 University of Texas, Austin
- Risatti, Howard (1980) Professor  
 B.M. Roosevelt University  
 M.M. Roosevelt University  
 M.A. University of Illinois  
 Ph.D. 1978 University of Illinois
- Smith, Rosemary T. (1994) Assistant Professor  
 B.A. 1977 Michigan State University  
 M.A. 1986 University of Virginia  
 Ph.D. 1996 University of Virginia

#### Emeriti faculty

- Perry, Regenia A. (1967) Professor Emerita  
 B.S. Virginia State College  
 M.A. Case Western Reserve University  
 Ph.D. Case Western Reserve University

The Department of Art History offers its majors a program which acquaints them with the humanistic discipline of art historical inquiry. While providing students with the opportunity for a broad education drawing on the liberal arts and humanities, the department also emphasizes a close bond with the studio and performing arts and enjoys a close relationship with the other departments in the School of the Arts.

Recognizing the diverse interests of undergraduate students and the varied practical applications of art history, the department offers its majors a choice among four distinct curricula culminating in either the bachelor of arts or the

bachelor of fine arts degree. The B.A. degree (curricula A, B or C) focuses on academic disciplines in the liberal arts, while the B.F.A. degree (curriculum D) integrates the study of art history with art studio.

Curriculum A is a program with a liberal arts curriculum composed of an academic course of study exposing the student to the scholarship and research methods of not only art history, but related disciplines in the humanities. This program gives students the best possible background for future graduate work in art history.

Curriculum B, with strong liberal arts and studio components, is a comprehensive architectural history program which emphasizes the study of both Western and non-Western architecture. This program affords the student an excellent background for graduate work in architectural history and/or art history, as well as career opportunities in the field. Given the region's rich and diverse architectural resources, this program provides an unusual opportunity for on-site studies. By providing the student with additional studio training in art history, such as architectural presentation graphics and urban studies and planning, this program offers a well-rounded knowledge of architectural history.

Curriculum C is a program with a museum studies orientation which uses the superb resources in Richmond and throughout the state. It is a unique program providing students with the opportunity to intern at a regional museum.

Curriculum D, with a studio focus, permits the student to study art history with simultaneous involvement in the studio areas. The opportunity to delve into the interrelationships between the study of art and the actual creation of art is an ideal program for the artist who is deeply interested in discovering the past and understanding the present.

Along with these curricula, the department also offers a minor in art history, consisting of 18 credits in the minor field. These credits must include either six in the survey of western art, or eight in the survey of world art; plus 12 credits in four additional period courses. The student must select one course each from the following categories: (1) Classical, (2) Medieval, (3) Renaissance, (4) Baroque/ 18th century,

(5) 19th and 20th century, and (6) non-Western.

#### Degree requirements in art history

	Credits
<b>Art Historical — Curriculum A</b>	
Studios	7
Art history	42
Aesthetics or criticism	3
General studies	
English 101, 200	6
Literature	6
German or applicable Romance language	14
History	15
Archaeology, religion, anthropology, or cultural geography	9
Electives to include three credits in mathematics* and four credits in laboratory science	24
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#### Architectural History — Curriculum B

Studios	
Foundation program	8
Interior design graphics	6
Photography	4
Architectural history	24
Art history	18
Aesthetics or criticism	3
General studies	
German or applicable Romance language	14
History	12
English 101, 200	6
Literature 201-202	6
Anthropology 103	3
Archaeology 105	3
Science	
Physics 101, 101L	4
Geology 105, 105L	4
Religious studies 311 or 312	3
Urban studies 116, 240, 513	8
Mathematics*	3
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#### Museum Studies — Curriculum C

Studios	
Fine arts	6
Photography	2
Art history	33
Museum studies	15
Aesthetics or criticism	3
General studies	
English 101, 200	6
Literature	6
German or applicable Romance language	14
History	12
Archaeology, religion, anthropology or cultural geography	12
Business environment 121	3
Urban studies 116, 240	6

Electives to include three credits in mathematics\*  
and four credits in laboratory science

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#### Art Historical/Studio — Curriculum D

##### Studios

Foundation program	16
Fine arts	43
Art history	29
Introduction to the arts	1
Aesthetics or criticism	3
General studies	
English 101, 200	6
Literature	6
German or applicable Romance language	11
History	6
Mathematics*	3
Laboratory science	4

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\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

### Courses in art history (ARTH)

#### ARTH 103, 104 Survey of Western Art.

Semester courses; 3 lecture hours. 3, 3 credits. First semester: Prehistoric through Gothic. Second semester: Italian Renaissance through Modern. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

#### ARTH 145, 146 Survey of Oriental Art.

Semester courses; 3 lecture hours. 3, 3 credits. First semester: the art of India, Southeast Asia, and the Middle East. Second semester: the art of China, Korea, and Japan. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

#### ARTH 207 Introduction to Non-Western Art.

Semester course; 3 lecture hours. 3 credits. Art will be presented as an integral aspect of each culture from the areas of China, Japan, Africa, Oceania, Native America, and pre-Columbian Central and South America. Aesthetic appreciation will be enhanced through a presentation of various philosophies, customs and values. Illustrated lectures and analytical practices will be supported by the student visiting local museums and galleries to examine selected works of art.

#### ARTH 209, 210 American Art and Literature.

Semester courses; 3 lecture hours. 3, 3 credits. A general survey of the form and content of American art and literature with special emphasis on the relationships between visual

and literary works. First semester: before 1865. Second semester: since 1865.

#### ARTH 211, 212 Western World Art and Literature.

Semester courses; 3 lecture hours. 3, 3 credits. A general survey of the form and content of Western world art and literature with special emphasis on the relationships between visual and literary works. First semester: ancient Greece through the 16th century. Second semester: 17th century to the present.

#### ARTH 270, 271 History of the Motion Picture.

Semester courses; 3 lecture hours. 3, 3 credits. The history of development of the motion picture from its early beginnings to the present, with both technical and aesthetic consideration. Students engage in analysis and discussion after viewing selected films.

#### ARTH 300 Prehistoric and Ancient Art and Architecture.

Semester course; 3 lecture hours. 3 credits. A survey of the artistic expressions of the major prehistoric and ancient cultures of Europe, the near East, Egypt, and the Aegean.

#### ARTH 301 Art and Architecture of Ancient North America.

Semester course; 3 lecture hours. 3 credits. A survey of the major artistic traditions of ancient America, north of Mexico, including Woodlands, Mississippian, Plains, Eskimo, Northwest Coast, and the Southwest.

#### ARTH 305 Classical Art and Architecture.

Semester course; 3 lecture hours. 3 credits. A survey of the development of Greek, Etruscan, and Roman architecture, sculpture, painting, and the minor arts from their beginnings to the early fourth century A.D.

#### ARTH 310 Medieval Art and Architecture.

Semester course; 3 lecture hours. 3 credits. Survey of Western art and architecture between A.D. 300 and 1400.

#### ARTH 315 Renaissance Art and Architecture.

Semester course; 3 lecture hours. 3 credits. An examination of the Renaissance in Italy and Northern Europe. Painting, sculpture, and architecture of the 14th, 15th, and 16th centuries.

#### ARTH 316 Northern Renaissance Art and Architecture.

Semester course; 3 lecture hours. 3 credits. Painting, architecture, and sculpture during the North European Renaissance.

#### ARTH 317, 318 History of Architecture.

Semester courses; 3 lecture hours. 3, 3 credits. First semester: major architectural forms from ancient Egypt through Medieval period. Second semester: architecture in Europe and America from the Renaissance to the present.

#### ARTH 320 Baroque and Rococo Art and Architecture.

Semester course; 3 lecture hours. 3 credits. The art and architecture of Italy and northern Europe between 1600 and 1750.

#### ARTH 325 19th Century Art and Architecture in Europe.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, 104. Study of European art and architecture between 1770 and 1900.

#### ARTH 330 20th Century Art and Architecture.

Semester course; 3 lecture hours. 3 credits. A survey of 20th century art with emphasis on architecture, painting, and sculpture.

#### ARTH 335 Pre-Columbian Art and Architecture.

Semester course; 3 lecture hours. 3 credits. A study of the major artistic traditions of ancient America (i.e., Maya, Aztec, and Inca). The course concentrates on Meso-America and the Andean Region.

#### ARTH 338 Colonial Art and Architecture of Latin America.

Semester course; 3 lecture hours. 3 credits. A study of the major artistic traditions in Latin America from the 16th to the end of the 18th century.

#### ARTH 339 Modern and Contemporary Art and Architecture of Latin America.

Semester course; 3 lecture hours. 3 credits. A study of 19th and 20th century art in Latin America focusing on the major movements and artists of Mexico, the Caribbean, Central and South America.

#### ARTH 340 Art and Architecture of the United States.

Semester course; 3 lecture hours. 3 credits. A survey of painting, sculpture, and architecture from the Colonial period to the present.

#### ARTH 342/AFAM 342 African-American Art.

Semester course; 3 lecture hours. 3 credits. A study of the art forms produced by Americans of African origin from the seventeenth century to the present with an emphasis on contemporary trends in black art.

#### ARTH 350/AFAM 413 African and Oceanic Art.

Semester course; 3 lecture hours. 3 credits. A study of the architecture, painting, sculpture, and civilizations of the major art-producing tribes of West Africa and Oceania from the 13th century to the present.

#### ARTH 355 Symbolic Expression in the Visual Arts.

Semester course; 3 lecture hours. 3 credits. The nature of myth and allegory is presented through an introduction to central themes in Western art, such as saints, heroes, gods, and archetypes with some comparisons to non-Western art.

#### ARTH 358/AFAM 358 African Art and Architecture.

Semester course; 3 lecture hours. 3 credits. A study of African art and architecture from prehistoric times to the present. Special emphasis is placed on form, content, function and meaning, as well as the impact of African art on modern and African-American Art.

#### ARTH 360 Introduction to Conservation.

Semester course; 3 lecture hours. 3 credits. An introduction to the art and science of art conservation. The course is

designed to acquaint artists and art historians with the basic methods of deterioration, examination, and treatment of works of art.

#### **ARTH 370 History of Animated Film.**

Semester course; 3 lecture hours. 3 credits. The history of animation as an art form, from early experimental to popular culture to independent animation. Design, structure, and technique are considered.

#### **ARTH 401 Art and Architecture of the Ancient Near East.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth analysis of the artistic developments in Mesopotamia, Iran, Anatolia, and the areas peripheral to these cultural centers from 6000 B.C. to 300 B.C.

#### **ARTH 402 Art and Architecture of Ancient Egypt.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth analysis of the development of Egyptian styles from the origins of ancient Egyptian culture to its absorption in the Roman Empire. The major iconographical themes, both religious and secular, will be studied.

#### **ARTH 404 Studies in Prehistoric and Ancient Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

#### **ARTH 405 Studies in Greek, Etruscan, and Roman Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

#### **ARTH 412 Early Medieval Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An investigation of medieval concepts of the late Roman and Byzantine Empires, and the art of Migrations. Subsequent developments in Carolingian, Ottonian, and Romanesque art and architecture are the main topics to be considered.

#### **ARTH 413 Gothic Art.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. Origins and developments of the Gothic style with emphasis on the architecture and sculpture of France.

#### **ARTH 414 Studies in Medieval Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subject to be offered each semester.

#### **ARTH 415 Early Italian Renaissance Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An

investigation of painting, sculpture, and architecture of the Duecento, Trecento, and Quattrocento in Italy.

#### **ARTH 417 The High Renaissance.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. Intensive consideration of the great masters of Italian art in the early 16th century.

#### **ARTH 419 Studies in Renaissance Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subject to be offered each semester.

#### **ARTH 420, 421 The Baroque In Northern Europe; The Baroque In Southern Europe.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: Three hours of art history or permission of instructor. First semester: an investigation of the painting, sculpture, and architecture of France and the Low Countries. Particular emphasis will be given to the diverse characteristics of the aristocratic and bourgeois stylistic trends of the period. Second semester: an investigation of the painting, sculpture, and architecture of Italy, Spain, Germany, and Austria. The relationship of church and state will be a primary theme of the course.

#### **ARTH 422 Spanish Painting: El Greco through Picasso.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 103, 104 or ARTF 105, 106 or by permission of the instructor. This course addresses the question of the "Spanishness" of Spanish art. The careers of El Greco, Ribera, Zurbarán, Murillo, Velázquez, Goya, Dali, Miro and Picasso are examined in relation to the traditional xenophobia of Spanish culture and the paradox of Spanish openness to the art of Italy, Flanders and France.

#### **ARTH 423 Rococo and Other 18th-Century Art.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth analysis of Rococo painting, sculpture, and architecture in Central Europe and a study of major movements of this period in France and England.

#### **ARTH 424 Studies in Baroque and Rococo Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

#### **ARTH 425, 426 Neoclassicism, Romanticism, Realism, and Impressionism through Fin-de-Siecle.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: Three hours of art history or permission of instructor. First semester: a detailed analysis of European art during the first half of the 19th century with special emphasis on French and English painting. Consideration also will be given to artistic and cultural interrelationships marking the transition from the 18th to the 19th century. Second semester: a detailed

analysis of European art during the latter 19th century. Consideration also will be given to artistic and cultural interrelationships heralding the transition to the 20th century.

#### **ARTH 427 Renaissance Art and Architecture of Colonial Latin America, 1500-1650.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth study of the most important contributions of Renaissance Ibero-American art throughout the Western Hemisphere in architecture, sculpture, and painting.

#### **ARTH 428 Baroque and Neoclassic Art and Architecture of Colonial Latin America.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth study of the most important contributions of Baroque and Neoclassic Ibero-American art throughout the Western Hemisphere in architecture, sculpture, and painting.

#### **ARTH 429 Studies in 19th-Century Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

#### **ARTH 430 Modern Painting.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An analysis of the major movements in 20th century painting.

#### **ARTH 431 Modern Sculpture.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. The evolution of 20th century sculpture considering major movements and artists.

#### **ARTH 433 Modern Architecture.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An investigation of major architectural periods and achievements in commercial and residential designs from 1850 to the present; tracing the development of the International Style, traditional architecture, the evolution of the skyscraper, Art Nouveau, and the works of Henry Hobson Richardson, Louis Sullivan, and Frank Lloyd Wright.

#### **ARTH 435, 436 Contemporary Art I, II.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisite: Three hours of art history or permission of instructor. First semester: an in-depth examination of art from 1940-1960. Will include discussion of background and context. Second semester: a continuation of detailed analysis of art from 1960 to the present.

#### **ARTH 438 The Roots of Modernism.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 103, 104 or ARTF 105, 106, or by permission of the instructor. This course focuses on the revolutionary period in art and society (1884-1930) which follows the transformation of Neo-classicism by J.L. David. The development of the Modern tradition: Realism, Impressionism, post-Impressionism, Cubism, Fauvism,

Dada and Surrealism, is examined against the forces of the larger world in which it occurs.

**ARTH 439 Studies in Twentieth-Century Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 440/AFAM 440 Contemporary Art and Architecture of Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the impact on African art and architecture of Colonialism, urbanization, and modernization. Special emphasis is placed on the search for a new identity by contemporary African artists.

**ARTH 441 Architecture of the United States.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth investigation of major architectural developments from the Colonial period to the present, including an analysis of European prototypes.

**ARTH 442 Architecture in Richmond.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. History and origins of Richmond area architecture.

**ARTH 443 Folk Art of the United States.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An examination of the development and history of three centuries of tradition in folk art applicable to the five major areas: painting, sculpture, furniture, decorated household objects, and architectural decoration.

**ARTH 444 Studies in the Art of the United States.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 445 The Art of India.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: General background in art, history, or religion of the area. The Indus Valley civilization through Maurya, Sunga, Kushana, Andhra, Gupta, and Pallava periods.

**ARTH 447 The Art of Southeast Asia.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTH 145, 146, or general background in the art, history, or religion of the area. The art of Burma, Malaya, Thailand, Cambodia, Indochina, and Indonesia.

**ARTH 449 Studies in Asian Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 450 Art and Architecture of Mesoamerica.**

Semester course; 3 lecture hours. 3 credits. Prerequisite:

Three hours of art history or permission of instructor. An in-depth study of the artistic traditions of Mesoamerica (i.e., Maya, Aztec and Olmec).

**ARTH 451 Art and Architecture of Andean America.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An in-depth study of the pre-Columbian art production of the Andean region (i.e., Chavin, Moche, and Inca art).

**ARTH 452 Studies in Pre-Columbian Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period (Ancient America). See the Schedule of Classes for specific subjects to be offered.

**ARTH 454 Studies in African and Oceanic Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An in-depth examination of selected art and issues of the period. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 455 Aesthetics and Modern Theories of Art.**

Semester course; 3 lecture hours. 3 credits. An investigation of modern aesthetic theories and concepts in art with a foundation in premodern aesthetics. Writing intensive.

**ARTH 456 Ideas and Criticism in Art.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An in-depth examination of modern concepts in the literature of art criticism with particular emphasis on the principal writings of leading American critics.

**ARTH 457/WMNS 457 Women, Art and Society.**

Semester course; 3 lecture hours. 3 credits. A re-examination of a variety of issues concerning women, art and society: the position assigned women within the history of art as it relates to historical place and the aesthetic values of the canon, the gendering of style, patronage, audience, and gaze. Through a survey of images of and by women, as well as through an analysis of art historical and critical texts, this course addresses the question: "How are the processes of sexual differentiation played out across the representations of art and art history?"

**ARTH 459 Studies in Aesthetics, Theory and Criticism of Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected topics. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 460 Art and Architecture in Latin America, 1780-1915.**

Semester course; 3 lecture hours. 3 credits. This course studies the impact of the Enlightenment, Independence, and the struggles against foreign intervention and for social justice and national and regional identity in the art and architecture of Latin America from the inception of Neoclassicism under the academies of Mexico and Brazil to the inception of Modernism during World War I.

**ARTH 461 Art and Architecture in Latin America, 1915 to the Present.**

Semester course; 3 lecture hours. 3 credits. This course studies the finest expressions of modern Latin American art within the context of the arrival of Modernism in art, improved communications and travel, the growth of the middle class, population explosion, industrialization, urbanization, movements for reform and revolution, and the struggle against economic and cultural dependence and homogenization. The course is hemispheric in scope but devotes special attention to Mexico, Brazil, and Argentina.

**ARTH 469 Studies in Museum Methods.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An in-depth examination of selected topics. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 470 History of Animated Feature Film.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An analysis of selected animated feature films, including animation combined with live action. Both American and foreign films will be considered.

**ARTH 471 Film Theory.**

Semester course; 3 lecture hours. 3 credits. Theories and criticism dealing with the medium, form, function, and psychology of film. Students will examine the medium through reading and discussion of such film theorists and aestheticians as Munsterberg, Eisenstein, Arnheim, Bazin, Kracauer, Burch, and Langer as well as through a comparison of film and the other arts.

**ARTH 472 History of Photography.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Three hours of art history or permission of instructor. An investigation of the basic trends in the history of photography. This course will deal with the chronological development of the art, the role of the photographer, the properties of photography which make it unique, and those that ally it to the other visual arts.

**ARTH 474 Studies in Film.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth examination of selected topics. See the Schedule of Classes for specific subjects to be offered each semester.

**ARTH 489 Topics in Advanced Art History.**

Semester course; 3 lecture hours. 3 credits. May be repeated. An in-depth study of a selected topic in art history not included in the curriculum. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 493 Museum Internship.**

Semester course; 9 to 18 studio hours. 3 to 6 credits. May be repeated with changing content for a maximum of twelve credits. Prerequisites: ARTH 469 and permission of the chair of the department of art history. Fieldwork in a local or regional museum.

**ARTH 497 Directed Research Project.**

Semester course; 3 credits. Prerequisite: Permission of instructor and department chair. Advanced individual work on a subject to be formulated in writing by the student and the instructor. Writing intensive.

**ARTH 502 Historical Preservation and Architectural History.**

Semester course; 3 lecture hours. 3 credits. An introduction to the methods or research, record keeping and reporting used in architectural history, and to the evolution of the discipline, especially in relation to historic preservation.

**ARTH 504 Advanced Studies in Prehistoric and Ancient Art.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of artistic development in one or more ancient and prehistoric cultures, such as in Africa, Asia, Europe, or the Americas. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 505 Advanced Studies in Greek, Etruscan, and Roman Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of the art and ideas of the classical Greek and Roman cultures, including the Etruscans. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 514 Advanced Studies in Medieval Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of development in the art and ideas of Byzantine, Germanic, Romanesque or Gothic Europe or of Islam. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 519 Advanced Studies in Renaissance Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the Proto-Renaissance, Early Renaissance, or High Renaissance in Europe or Latin America. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 524 Advanced Studies in Baroque and 18th-Century Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of England, France, the low countries, Italy, Spain, Latin America, Germany, and Austria during the Baroque period and/or 18th century. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 529 Advanced Studies in 19th-Century Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of

a selected aspect of the development of the art and ideas of the nineteenth century including Neoclassicism, Romanticism, Realism, Impressionism in Europe and/or America. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 539 Advanced Studies in 20th-Century Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the 20th century in Europe and/or America. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 542 Advanced Studies in the Architecture of Richmond.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An advanced, detailed study of a selected aspect of the development of the architecture of the city of Richmond. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 544 Advanced Studies in Art and Architecture of the United States.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of the United States. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 549 Advanced Studies in the Art and Architecture of Asia.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of India, China, Korea, Japan, Southeast Asia, or the Middle East. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 552 Art and Architecture of Central, Eastern, and Southern Africa.**

Semester course; 3 lecture hours. 3 credits. A study of the major art-producing cultures of Central Africa, including the Cameroon, Gabon, and Zaire; East Africa, including Kenya, Tanzania, and Mozambique; and Southern Africa, Bushman art, prehistoric cave paintings, and rock engravings.

**ARTH 554 Advanced Studies in African or Oceanic Art and Architecture.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. An advanced, detailed study of a selected aspect of the development of the art and ideas of African or Oceanic cultures. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 555 Advanced Studies in Aesthetics and Art Theory.**

Semester course; 3 lecture hours. 3 credits. An advanced, detailed investigation of aesthetic theories and concepts in art.

**ARTH 556 Advanced Studies in Ideas and Criticism in Art.**

Semester course; 3 lecture hours. 3 credits. An advanced, detailed examination of specific concepts in the literature of art criticism with particular emphasis on the principle writings of leading American critics.

**ARTH 569 Advanced Studies in Museum Methods.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of nine credits. Advanced instruction in the major aspects of museum administration. Lectures by museum personnel and workshops in a variety of museums. A major research project is required.

**ARTH 571 Advanced Studies in Film Theory.**

Semester course; 3 lecture hours. 3 credits. Advanced, detailed study of the theories and criticism of film, dealing with medium, form, function, and psychology.

**ARTH 574 Advanced Studies in Film.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed examination of selected topics in the history of film. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 575 Advanced Studies in the History of Photography.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of twelve credits. An advanced, detailed examination of selected topics in the history of photography. See the Schedule of Classes for specific topic to be offered each semester.

**ARTH 580 Registration Procedures for Museums.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. A study of the standard registration procedures and the current vocabulary employed by the profession. Professional ethics will be stressed to enable the students to become more fully aware of the importance within the museum system.

**ARTH 581 Museum Exhibitions.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. The study of exhibitions for museums including design, fabrication, lighting, brochures, invitations, and publications.

**ARTH 582 Educational Program and Public Relations for Museums.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. A study of programming for an art center/museum, including organization of permanent displays, special exhibitions, lectures, docent programs for children and adults, and traveling exhibition services. Special emphasis will be placed on the use of audio-visual materials and techniques in the exhibitions and interpretation programs, as well as the techniques of public information, including press releases, use of television, radio, newspapers, and scholarly publications.



**ARTH 583 Curatorship and Connoisseurship.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. An examination of the curator's relationship and responsibilities to the museum system, research methods, methods of acquisition, organization of museum reference library (including slides and other audio-visual materials), exhibition catalogues, clippings, and file and computer retrieval systems.

**ARTH 584 Museum Administration.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ARTH 464, 465 and/or permission of instructor. A study of museum organization, including staff organization and relationship of director to board, building and grounds, heating and humidity control, guarding and fire control, special installments and shops, membership programs, museum finances for operation and acquisition funds, grants, promotion, development, and overall responsibility to the community and profession.

**ARTH 590 Art Historiography and Methodology.**

Semester course; 3 lecture hours. 3 credits. Basic methodology for beginning art history graduate students. An examination of the traditional research methods of the art historical discipline, geared to familiarize students with standards in research and scholarship.

**ARTH 591 Topics in Advanced Art and Architectural History.**

Semester course; variable; 1-6 credits. May be repeated for a maximum of nine credits. Prerequisite: Permission of instructor. An in-depth study of a particular aspect of the art and architecture of both Old and New World cultures. Course consists exclusively of extended off-campus trips to sites and collections throughout the United States and abroad. See the Schedule of Classes for specific topics to be offered each semester.

**ARTH 593 Advanced Museum Internship.**

Semester course; 9 to 18 studio hours. 3 to 6 credits. May be repeated for a maximum of nine credits. Prerequisite: Permission of instructor, chair of the graduate committee, and/or chair of the department of art history. Advanced fieldwork in a local, regional, or national museum.

## Department of Communication Arts and Design

**John DeMao**

Associate Professor and Department Chair (1982)  
B.Ed. 1974 North Carolina State University  
M.P.D. 1976 North Carolina State University

**John B. Malinoski**

Associate Professor and Associate Chair (1988)  
B.A. 1982 State University of New York, Fredonia  
M.F.A. 1987 Rochester Institute of Technology

**Charles Scalin**

Professor and Assistant Chair (1968)  
B.F.A. Art Institute of Chicago  
M.F.A. 1968 Pratt Institute

**Pamela Turner**

Assistant Professor and Assistant Chair (1997)  
B.F.A. 1984 Virginia Commonwealth University  
M.F.A. 1988 Virginia Commonwealth University

Bostic, Alexander (1990) Associate Professor

A.A.S. 1976 Sillaveria  
B.F.A. 1979 Pratt Institute  
M.S. 1994 Syracuse University

Carter, Robert C. (1976) Professor

B.F.A. University of Utah  
M.F.A. 1976 University of Illinois

Chessin, Laura (1997) Assistant Professor

B.F.A. 1980 Cornell University  
M.F.A. 1988 Rhode Island School of Design

Colley, J. David (1995) Assistant Professor

B.A. 1963 Murray State University  
M.A. 1964 Columbia University  
M.F.A. 1969 University of Illinois, Urbana-Champaign

Day II, Benjamin R. (1982) Professor

B.S. Lamar University  
M.F.A. 1971 Louisiana Tech University

Dommissie, Durwood C. (1974) Professor

B.F.A. Layton School of Art  
M.F.A. 1963 Cranbrook Academy of Art

Earley, Donald T. (1984) Assistant Professor

A.S.S.O. 1985 Fashion Institute of Technology

Foster, Robert L. (1981) Associate Professor

B.F.A. 1977 Virginia Commonwealth University  
M.F.A. 1985 Syracuse University

Franck, Kathleen Ann (1980) Associate Professor

B.F.A. 1967 University of Illinois  
M.F.A. 1985 Syracuse University

Hoskins, Steven (1998) Assistant Professor

B.F.A. 1983 New Mexico State University  
M.A. 1985 Michigan State University  
M.F.A. 1995 Rhode Island School of Design

Kaputof, Robert M. (1993) Assistant Professor

A.A. 1972 Diablo Valley Junior College  
B.A. 1975 Chico State University

M.A. University of California, Berkeley

M.F.A. 1979 University of California, Berkeley

Konechne, Teresa (1998) Assistant Professor

B.S. 1987 University of Texas at Austin  
M.F.A. 1998 University of Iowa

McKelvey, Roy D. (1995) Assistant Professor

B.F.A. 1979 Carnegie-Mellon University  
M.S. 1985 Carnegie-Mellon University

McLaughlin, Mary (1989) Associate Professor

B.F.A. 1972 University of Illinois

Meganck, Robert J. (1978) Professor

B.F.A. Art School of the Society of the Arts and Crafts  
M.F.A. 1975 Cranbrook Academy of Art

Meggs, Philip B. (1968) Professor

B.F.A. Virginia Commonwealth University  
M.F.A. 1971 Virginia Commonwealth University

Ouchi, Akira (1982) Associate Professor

B.A. Waseda University  
M.S. 1971 Illinois Institute of Technology

Strube, Nancy L. (1974) Assistant Professor

B.F.A. 1978 Parsons School of Design

Woolman, Matthew (1997) Assistant Professor

B.A. 1990 Berlin College

M.F.A. 1996 Virginia Commonwealth University

**Emeriti faculty**

Apgar, Nickolas, Professor Emeritus

B.F.A. Syracuse University

M.F.A. Syracuse University

Bevilaqua, William Otto, Professor Emeritus

B.F.A. Virginia Commonwealth University

M.F.A. University of North Carolina

Carlyon, Richard N., Professor Emeritus

B.F.A. Virginia Commonwealth University

M.F.A. Virginia Commonwealth University

The Department of Communication Arts and Design, in close cooperation with the Department of Photography, offers intense study of visual communications and design. The program focuses on the development of innovative thinking and creative problem-solving abilities required for professional excellence. The curriculum is oriented toward understanding visual form and structure, professional skills, and social and environmental awareness. The information/communication orientation of contemporary society relies on this discipline to create visual images and concepts, connecting people to their economic, social, cultural and political lives.

To face the challenges in this era of rapid technological change, the department prepares students for future societal needs by fostering a spirit of experimentation and inquiry, and by integrating computer and electronic media study into the program.

The Department of Communication Arts and Design offers a 131-credit bachelor of fine arts degree. This degree is offered in two programs, communication arts — which focuses on visual imaging — and communications design — which focuses on the design of visual communications.

After completing the Foundation Program, separate communication arts and communication design sophomore core programs further develop fundamental art and design skills essential to each program. Upper-level study in communication arts includes courses in digital imaging, illustration, kinetic imagery (film/video/animation), three-dimensional modeling and animation and photography. Students in the Communication Design Program take courses in art direction, graphic design, typographic design, three-dimensional design (environmental/exhibit/package),

and interactive multimedia design (interactive video, Internet communication and Web site design).

### Communication Arts Program

**Digital imaging.** Courses in digital imaging allow students to explore the creative and communicative aspects of visual image generation made possible through computer technology. Emphasis is placed on bridging the traditional boundaries between illustration, photography and kinetic imagery creating an interdisciplinary approach to computer image creation and manipulation.

**Illustration.** Illustration is the component of visual communication which encourages the use of drawn, painted or constructed imagery to communicate ideas. Illustration makes use of a wide range of media (both traditional and contemporary). It is often accompanied by text and is created with the intent of being reproduced for public dissemination.

**Kinetic imagery.** This concentration explores the creative synthesis of sound and the moving image through the mediums of film, video and animation. Emphasis is placed upon the artistic and communicative uses of media in contemporary society.

**Three-dimensional modeling.** Three-dimensional modeling courses are designed for students who desire advanced study in the use of the computer as a tool for designing, modeling, and rendering three-dimensional objects in space. Emphasis is placed on electronic animation as a communication discipline and career.

### Communication Design Program

**Art direction.** Courses in art direction explore the creative synthesis of aesthetic and business objectives for the purposes of effective communication. Emphasis is placed on conceptual development of communication ideas, the development of communication strategy involving the use of media and the coordination of creative activities.

**Graphic design.** Courses in graphic design are concerned with the creation and production of solutions to visual communications problems in a variety of media and environments.

**Interactive multimedia design.** Courses in this area focus on the use of contemporary electronic and computer

media to meet communication needs. Emphasis is placed on design, development, authoring and production of integrated visual/textual/audio solutions.

**Typographic design.** Courses in this area explore the use of type and typography as an expressive and functional communicative tool. Emphasis is placed on understanding typographic design criteria that meet the reader's needs, the communicator's intent and the designer's formal sensibilities.

**Three-dimensional design.** Courses in this area explore the design of three-dimensional solutions to communication problems. Emphasis is on programmatic evaluation and the influence of functional, structural and contextual criteria on solutions.

### Multidisciplinary Program

Students with clearly defined personal goals may develop an individual program of study after their sophomore year. A program plan encompassing study in both communication arts and communication design is developed in close cooperation with the faculty adviser. To allow for sufficient in-depth study in the two chosen areas, successful completion of an additional 16 credits in upper-level studio courses is required. These courses are divided between the selected areas and must be taken in "emphasis area studios." An additional semester beyond what would normally be taken to fulfill requirements may be needed to complete this option. The individual program proposal requires the approval of the department chair.

### Degree requirements in communication arts and design

	Credits
Studios	
Foundation program	16
Visual communications fundamentals	24
Emphasis area	33 (CA) or 39 (CD)
General education academic electives	24
Introduction to the arts	1
Art history and theory	20
Open electives	12 (CA) or 6 (CD)
	<hr/> 130

### Communication Arts Program

#### Freshman year

Art Foundation Program		26
ENGL 101 Composition and Rhetoric I		3
Literature course (ENGL 200, 202, 203, 204, 205, or 206)		3
		<hr/> 32

#### Sophomore year

	Fall	Spring
CARD 207 Introduction to Computer Techniques	3	-
CARD 200 Communication Arts: Visual Fundamentals	6	-
CARD 224 Introduction to Illustration	3	-
CARD 252 20th Century Visual Communication I	3	-
ENGL 200 Composition and Rhetoric II	3	-
CARD 206 Anatomy for Illustration	-	3
CARD 208 Communication Arts Computer Techniques	-	3
CARD 228 Type and Image	-	3
PHTO 245 Design Photography I	-	3
CARD 253 20th Century Visual Communications II	-	3
Literature course (ENGL ENGL 200, 202, 203, 204, 205, or 206)	-	3
	<hr/> 18	<hr/> 18

#### Junior year

CARD 321 Illustration Media and Techniques I	3	-
CARD 323 Figure in Illustration I	3	-
CARD 325 Color Theory and Practice	3	-
General education	3	3
General education	3	3
Open elective	3	-
CARD 324 Figure in Illustration II	-	3
CARD 326 Editorial Illustration I	-	3
CARD Emphasis Area Studio	-	3
	<hr/> 18	<hr/> 15

#### Senior year

CARD 424 Visual Journalism	3	-
CARD Emphasis Area Studio	6	-
Open elective	3	6
CARD 403 Senior Studio	-	6
CARD 356 Studio Management	-	3
	<hr/> 12	<hr/> 15

### Communication Design Program

	Credits	
	Fall	Spring
<b>Freshman year</b>		
Art Foundation Program	16	15

#### Sophomore year

CARD 210 Communication Design: Visual Fundamentals	6	-
CARD 211 Typographics I	3	-

CARD 207 Introduction to Computer Techniques	3	-
CARD 252 20th Century Visual Communications I	3	-
General education	3	-
CARD 212 Communication Design I	-	6
PHTO 245 Design Photography I	-	3
CARD 209 Communication Design Computer Techniques	-	3
CARD 253 20th Century Visual Communications II	-	3
English 200 Composition and Rhetoric II	-	3
	<hr/>	<hr/>
	18	18

**Junior year**

CARD 310 Communication Design II: Publications	6	-
CARD 312 Typographics II	3	-
CARD Emphasis Area Studio	3	-
General education	3	3
General education	3	3
CARD 311 Communication Design III: Interactive	-	6
CARD 412 Typographics III	-	3
	<hr/>	<hr/>
	18	15

**Senior year**

CARD 410 Communication Design IV: Systems	6	-
CARD Emphasis Area Studio	3	3
Visual communication lecture	3	3
Open elective	3	3
CARD 411 Communication Design V: Design Studies	-	6
	<hr/>	<hr/>
	15	15

Total credits 130

Advancement in this department is based on completion of prerequisite courses. Successful completion of the Art Foundation Program is required as a prerequisite for all 200-level studio courses in the Department of Communication Arts and Design. Because of enrollment pressures, admission is by portfolio review administered only once yearly during the spring semester. Transfer students also must submit a portfolio to the department before acceptance will be granted. Acceptance into and successful completion of the foundation program or transfer equivalent does not guarantee entry into the department. Twenty-four credits of visual communications fundamentals must be completed before entering 300- and 400-level studio courses. Specific

prerequisites for professional courses are in the course listings. Nonmajors who have completed the foundation program can take courses in the department with the permission of the assistant chair when space is available.

Equipment, materials and supplies in this program may cost in excess of \$1,000 per year, depending on the course of study.

**Master of fine arts/visual communications**

The Department of Communication Arts and Design prepares graduate students to assume a leadership role in a complex and expanding profession. To this end, the department develops the philosophy and personal direction of each student and focuses their resources on functional and expressive visual communications. Students concentrate on the philosophical, communicative, and aesthetic relationships of visual problem solving and the interacting skills leading to the effective articulation of concepts. The master of fine arts degree requires 60 credit hours.

See the Graduate Bulletin for a more detailed description of this program.

**Courses in communication arts and design (CARD)****CARD 191 Studio Topics in Communication Arts and Design.**

Semester course; 3-9 studio hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Open to nonmajors. Topical studio focusing on visual exploration and the creation of expressive imagery in conjunction with functional communications. See the Schedule of Classes for specific topics to be offered.

**CARD 200 Communication Arts Visual Fundamentals.**

Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: Successful completion of the Art Foundation Program. Required for communication arts emphasis. An introduction to the principles of visual communication. Fundamentals of communication and the creation and manipulation of visual imagery for the purpose of expressing ideas will be explored.

**CARD 201 Introduction to Video.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Required for communication arts kinetic imaging emphasis. A study of the processes and equipment necessary for producing and editing work on videotape. This course is an elective for communication arts emphasis.

**CARD 206 Anatomy for Illustration.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Required for communication arts - illustration emphasis. An advanced investigation of human structure and motion as applied to illustration. In addition to assigned readings, students will execute a series of anatomical drawings.

**CARD 207 Introduction to Computer Techniques.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Corequisite: CARD 210. Required course. An introductory workshop in microprocessor hardware operations, software procedures, and Internet communications necessary for contemporary communication arts and design practice.

**CARD 208 Communication Arts Computer Techniques.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CARD 207. Required: Communication Arts Program. An introductory course into the use of the computer and peripheral devices in the creation of raster and vector based images.

**CARD 209 Communication Design Computer Techniques.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: CARD 207. Corequisite: CARD 212. A workshop in advanced software procedures necessary for contemporary typography and graphic design practice.

**CARD 210 Communication Design Visual Fundamentals.**

Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: Successful completion of Art Foundation Program. Required for communication design emphasis. A course in which basic visual and cognitive organizational processes for the practice of communication arts and design are presented through lectures and demonstrated through studio exercises. The course includes visual perception and organization, visual problem-solving techniques, and visual ideation.

**CARD 211 Typographics I.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Corequisite: CARD 212. Required Communication Design Program. An introduction to communication problem solving through the visual medium of language. The fundamentals of typography and typographic design are explored in experimental and practical projects.

**CARD 212 Communication Design I: Form and Communication.**

Semester course; 4 lecture and 6 studio hours. 6 credits. Prerequisite: CARD 210. Corequisite: CARD 211. Required for Communication Design Program. The relationship of form and communication in graphic design is explored through theoretical and applied projects. The impact of typography and imagery and their syntactic relations upon audience and content is stressed.

**CARD 224 Introduction to Illustrative Drawing.**

Semester course; 2 lecture and 3 studio hours. 3 credits. Required Communication Arts Program. An intermediate drawing course with emphasis on drawing methods and

illustrative techniques to prepare the student for upper-level study in visual communications.

#### **CARD 228 Type and Image.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Required: Communication arts and digital imaging and photography emphasis areas. Intermediate course exploring the use of type and image in visual communications.

#### **CARD 233 Media Arts Survey.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Required: Communication arts program, digital imagery emphasis. An introduction to kinetic imagery and the principles of media aesthetics.

#### **CARD 239 Media Presentation.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Required: Communication arts, kinetic imaging, and photography emphasis areas. Writing intensive; oral communication intensive. An introduction to the synthesis of word, sound, and moving visual imagery for creating effective media presentations.

#### **CARD 252 20th Century Visual Communications I.**

Semester course; 3 lecture hours. 3 credits. Required course.  
An investigation of contemporary visual communication concepts, media, and images and their role in contemporary society.

#### **CARD 253 20th Century Visual Communications II.**

Semester course; 3 lecture hours. 3 credits. Required course.  
An historical overview of the development of 20th century visual communications as specifically defined by technological advancements and media concerns.

#### **CARD 291 Studio Topics in Communication Arts and Design.**

Semester course; 3-9 studio hours. 1-3 credits. May be repeated with different topics for a maximum of nine credits. Open only to majors in the School of the Arts. Topical studio focusing on visual exploration and the creation of expressive imagery in conjunction with functional communications. See Schedule of Classes for specific topics to be offered.

#### **CARD 300 Creative Strategies.**

Semester course; 2 lecture and 3 studio hours. 3 credits. A course in which alternative creative communication problem solving strategies are investigated.

#### **CARD 301 Print Production.**

Semester course; 1 lecture and 3 studio hours. 2 credits.  
Prerequisite: CARD 211. A study of the tools and processes used in preparing a design for reproduction.

#### **CARD 302 Graphics Processes and Techniques.**

Semester course; 1 lecture and 3 studio hours. 2 credits.  
Prerequisite: CARD 211. A workshop in graphics lab equipment and materials as design tools. Emphasis is on image creation and processing.

#### **CARD 303 Two-dimensional Comping.**

Semester course; 1 lecture and 3 studio hours. 2 credits.  
Prerequisite: CARD 211. A technical workshop which

explores the techniques, materials, and procedures of making comprehensives.

#### **CARD 304 Sound Communication.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Required: Communication arts, kinetic imaging emphasis. The basic theory and production of media-based sound. This course is an elective for communications arts emphasis.

#### **CARD 308 Web Page Design.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 208 or CARD 209 or permission of instructor. A course developing the design of Web sites. Emphasis is placed on the visual design, navigation, development, communication and authoring of Web sites.

#### **CARD 310 Communication Design II: Publications.**

Semester course; 4 lecture and 6 studio hours. 6 credits.  
Prerequisites: CARD 212. Corequisite: CARD 312. Required for communication design emphasis. An introduction to the design process and applied realization of print based publications. It considers the form and communication of the printed page from the tradition of print to the organizational principles outside that tradition through lectures, demonstrations, and problem solving.

#### **CARD 311 Communication Design III: Interactive Design.**

Semester course; 4 lecture and 6 studio hours. 6 credits.  
Prerequisites: CARD 310. Corequisite: CARD 412. Required for communication design majors. An examination of the conceptual and technical issues involved in the design and production of interactive documents. The course addresses the possibilities and limitations of computer generated images, sound, and digital video as they relate to visual communication problem solving.

#### **CARD 312 Typographics II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 211. Corequisite: CARD 310. An intermediate exploration of typography as an expressive and functional communication vehicle. Emphasis is placed on defining effective design criteria to meet the reader's needs and the communicator's intent, and the designer's formal sensibilities.

#### **CARD 321 Illustrative Media and Techniques I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 224. Required: Communication Arts Program, illustration emphasis. An advanced course exploring various traditional wet media techniques in depicting representational form in illustration.

#### **CARD 322 Illustration Media Techniques II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 321. This course is an elective for communication arts emphasis. A course exploring various mixed media techniques, including both two- and three-dimensional approaches to illustrative problems.

#### **CARD 323 Figure in Illustration I.**

Semester course; 3 lecture and 3 studio hours. 4 credits.  
Prerequisite: CARD 206 and CARD 224. Required for illustration

emphasis. An introduction to the visual representation of the human form as it applies to illustration.

#### **CARD 324 Figure in Illustration II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 323. Required: Communication Arts Program, illustration emphasis. An advanced course investigating visually expressive modification of the human form as it applies to illustration.

#### **CARD 325 Color Theory and Practice.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Required for illustration emphasis and completion of art foundation program. An intermediate course in the application of color theory to specific illustrative problems. A number of color theories, both historical and contemporary, will be studied and applied. This course is an elective for communication arts emphasis.

#### **CARD 326 Editorial Illustration I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 206. Required for illustration emphasis. This course is an elective for communication arts emphasis. A required course in black and white line art, developing students' skills in interpreting an author's manuscript. Various line techniques will be explored for newspaper and magazine reproduction. Oral presentations by the students are required.

#### **CARD 327 Digital Illustration.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 224, and CARD 208. Required for digital imaging emphasis. An intermediate course exploring the use of the computer and peripheral devices in the creation of raster and vector based drawing. This course is an elective for other communication arts emphasis.

#### **CARD 334 Electronic Animation I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 208 and CARD 239. Required: Communication arts, digital and kinetic imaging emphasis. An introduction to various video and electronic animation techniques.

#### **CARD 336 Video I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 201. Required for communication arts, kinetic imaging emphasis. A comprehensive course in video communication nonnarrative strategies and documentary formats.

#### **CARD 338 Computer Graphics II: 3-D Modeling.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 208. Required for communication arts, digital imaging and kinetic imaging emphasis. An introduction into the use of the computer as a tool for modeling and rendering 3-D objects.

#### **CARD 341 Art Direction I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 212. An introduction to the integrated activities of strategy, conceptual development, and design. This course is an elective for communication design emphasis.

**CARD 342 Art Direction II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 341. Concept, layout, and design of a corporate advertising campaign based on the evaluation of research, market analysis, and planning. This course is an elective for communication design emphasis.

**CARD 343 Advertising Concepts I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 212. A course focusing on creative thinking and the development of concepts and ideas in problems of art direction. This course is an elective for communication design emphasis.

**CARD 344 Broadcast Art Direction.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 341. A course concentrating on both the concept and planning aspects of broadcast mediums.

**CARD 351 Origins of Visual Communications.**

Semester course; 3 lecture hours. 3 credits. A history of visual communications and design from prehistoric times to the 20th century.

**CARD 352 Print Mediums.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing in the department. An overview of print production processes and techniques including electronic make-up, printing processes and production control and their relative merits as delivery mechanisms.

**CARD 353 Electronic Mediums.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing in the department. An overview of electronic production processes and techniques, video and audio pre-production, production, editing and postproduction, estimating, and production control.

**CARD 354 Theoretical and Philosophical Aspects of Contemporary Communication Arts and Design.**

Semester course; 3 lecture hours. 3 credits. A study of current theoretical and philosophical issues having an impact on the understanding of communication arts and design.

**CARD 355 Design Methods in Visual Communication.**

Semester course; 3 lecture hours. 3 credits. An in-depth investigation of the theoretical aspects of the design process within the context of designing effective visual communications.

**CARD 356 Studio Management.**

Semester course; 3 lecture hours. 3 credits. A study of business and management factors that relate to creative design. Topics include marketing, structure and organization, financial factors, ethical and legal aspects, and management of design, illustration, photography studios.

**CARD 357 Critical Issues in Media.**

Semester course; 3 lecture hours. 3 credits. Required for communication arts, digital imaging and kinetic imaging emphasis. Topics, theory, and genre affecting media and time based mediums are explored through critical discourse, readings, screenings, and lectures.

**CARD 391 Topics in Design.**

Semester course; variable; 1-3 credits per semester. May be repeated for a maximum of nine credits. Topical lectures in design issues and visual communications.

**CARD 392 Research/Individual Study.**

Semester course; 1-2 lecture and 3-6 studio hours. 2-4 credits. May be repeated for credit. The structuring, research, execution, and presentation of an independent project in visual communications under the direction of a faculty adviser. The student will be encouraged to become a self-generating problem seeker and solver with the ability to carry out self-stated goals.

**CARD 401 Electronic Prepress.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 209. A study of electronic tools, processes, and techniques, their integration with traditional production methods, and their use in preparing design work for production.

**CARD 403 Senior Studio.**

Semester course; 4 lecture and 6 studio hours. 6 credits.  
Required for communication arts emphasis. To be taken in the last semester of the student's senior year. Critical analysis and development of the student's exit portfolio with emphasis on refining and strengthening focus of the visual style and concept inherent in the body of work.

**CARD 407 Senior Portfolio.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Required: Communication design emphasis. Prerequisite: Senior status, Communication Design Program. A course oriented toward the creation of a professional corporate portfolio and resume.

**CARD 408 Multimedia Communication Systems.**

Semester course; 1 lecture and 3 studio hours. 2 credits.  
Prerequisite: CARD 207 or CARD 309 or permission of instructor. Corequisite: CARD 437. A technical workshop that explores hardware, software, and interconnectivity as it relates to the creation of complex multimedia communication/information delivery systems.

**CARD 409 Video Editing.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD336. An advanced study focusing on the operational skills necessary for working with advanced video postproduction equipment. This course is a studio elective for communication arts emphasis.

**CARD 410 Communications Design IV: Systems in Design.**

Semester course; 4 lecture and 6 studio hours. 6 credits.  
Prerequisites: CARD 311. The study of systematic and methodological approaches to communication design through the solving of complex problems in visual communication. Emphasis is placed on objective process and research in approaches to various professional situations.

**CARD 411 Communication Design V: Design Studio.**

Semester course; 4 lecture and 6 studio hours. 6 credits.  
Prerequisite: CARD 410 Communication Design IV: Systems

in Design. A course in which project situations of professional visual communication offices are approached in an educational context. Problems are presented which are representative of current visual communication problems.

**CARD 412 Typographics III.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 310 and 312. Required: Communication Design Program. Advanced problems in typographic design with emphasis upon the development of a personal creative approach to form and communication. Writing intensive.

**CARD 413 Package Design.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 311 and 312. Theoretical and studio investigation of three-dimensional structural principals as they relate to the area of packaging, exhibition, and environmental design.

**CARD 414 Exhibition and Environmental Graphic Design.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 411 and 412. Study of the presentation of information in large-scale, three-dimensional formats. Exploration of exhibition and environmental design, including developing imagery and typography, understanding the use of "wayfinding" (identification, interpretation, and orientation), and human factors, communicating of programmed content.

**CARD 416 Motivational Graphics.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 310 and 312. Study in the development of visual communication performance criteria and practical strategies that influence audience attitudes and behavior.

**CARD 417 Interdisciplinary Team Design.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 310 and 312. Advanced projects in visual communication in which student design teams solve complex problems requiring collaboration.

**CARD 418 Design Center: Print Media.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Course may be repeated for credit. Prerequisites: CARD 310 and 312, and portfolio review by faculty. A professional studio to give students practical experience working with faculty on design projects for the university and nonprofit community organizations.

**CARD 419 Electronic Imaging.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 311, CARD 321, or CARD 338. An advanced exploration into the use of the computer and other electronic peripheral devices in the creation of expressive imagery and functional communications.

**CARD 420 Book Illustration.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 322 and CARD 324. This course is an elective for communication arts emphasis. An advanced course exploring illustration for the book publishing market.

**CARD 421 Illustration for Business Communications.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 322 and 323. Required for illustration emphasis. An advanced course developing illustrations appropriate for business communications.

**CARD 422 Design Center: Internet Media.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Course may be repeated for a total of six credits.  
Prerequisites: CARD 308, 311, and 412 and portfolio review by faculty. A professional studio to give students practical experience working under faculty guidance on design projects for university clients and nonprofit community organizations.

**CARD 423 Editorial Illustration II.**

Semester course; 3 lecture and 3 studio hours. 4 credits.  
Prerequisites: CARD 321 and 311. An advanced course developing the student's skill at interpreting an author's manuscript. The major emphasis is given to illustrations appearing in books and magazines.

**CARD 424 Visual Journalism in Illustration.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 321 and 323. Required for illustration emphasis. Writing intensive. An advanced course developing the student's skill in commenting upon contemporary issues and themes independently of existing manuscripts. This is a team taught course with teaching responsibilities shared by faculty with expertise in illustration and faculty with expertise in journalism. Studio elective for communication arts emphasis.

**CARD 425 Experimental Illustration.**

Semester course; 3 lecture and 3 studio hours. 4 credits.  
Prerequisite: CARD 321. An advanced course encouraging the student to discover unusual techniques and to develop innovative solutions. The course stresses experimentation with novel media and surfaces.

**CARD 426 Editorial Illustration II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 326. This course is an elective for communication arts emphasis. An advanced course developing students' skills in interpreting an author's manuscript. The major emphasis is given to color illustrations appearing in magazines and newspapers.

**CARD 427 Imagery for Children.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 322 and CARD 324. An advanced course developing both fiction and nonfiction illustrations intended for the preschool and elementary school children's publishing market. Elective for communication arts emphasis.

**CARD 434 Electronic Animation II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 334. Students will work with advanced techniques and have the opportunity to design and produce their own projects. Studio elective for communication arts emphasis.

**CARD 436 Video II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: CARD 336. Required for communication arts, program kinetic imaging emphasis. A comprehensive course in video communication exploring narrative strategies and form-content relationships.

**CARD 438 Computer Graphics III: 3-D Animation.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 338. Advance study of computer modeling and the introduction of 3-D animation.

**CARD 439 Video III.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 436. An advanced course focusing on short subject pieces in video. Fictional and experimental narrative works will be investigated. This course is an elective.

**CARD 441 Art Direction III.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 342. An advanced exploration of art direction based on positioning of the corporation that carries over several different channels of communication.

**CARD 442 Art Direction IV.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 342. An advanced course in art direction including the development of integrated business advertising plans.

**CARD 443 Advertising Concepts II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 343. An advanced course in art direction focusing on the successful integration of strategy and creativity.

**CARD 444 Art Direction for Nonprofit Organizations.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 342. Advanced concept, layout, and design under the delimitations of precise environmental or social agendas and limited budgets.

**CARD 451 Management Aspects of Art Direction.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing in the department. An in-depth analysis of agency management, operations, and the function of art direction.

**CARD 491 Studio Topics in Visual Communications.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
May be repeated for a maximum of six credits. Prerequisites: Senior standing and permission of instructor. Topical studio focusing on research and experimentation in specialized visual communication media.

**CARD 492 Communication Arts and Design Internship.**

Semester course; 1-3 credits. May be repeated to a maximum of three credits. Prerequisites: Completion of junior year and 3.0 GPA in major. Permission of internship coordinator required. Communication arts and design majors only. Supervised pragmatic work experiences. Training is provided under the direction and supervision of qualified professional practitioners.

**CARD 519 Virtual Reality.**

Semester course; 3 lecture and 3 studio hours. 4 credits.  
Prerequisite: Permission of instructor required. An exploration into the creation of fully immersive, interactive, virtual environments and their use as communication and artistic mediums.

**CARD 537 Integrated Electronic Information/Communication Systems.**

Semester course; 3 lecture and 3 studio hours. 4 credits.  
Prerequisite: Permission of instructor required. A course concentrating on the design, development, authoring, production, and publication of electronic information/communication programs. Emphasis is placed on the creative integration of expressive form, communicative function, and effective application of advanced visualization technology.

**CARD 567 Visual Interface Design.**

Semester course; 3 lecture and 3 studio hours. 4 credits.  
Prerequisite: Permission of instructor. A course concentrating on the visual design and development of human-computer interface systems. Emphasis is placed on visual design processes and methods in the diverse arena of user interface design.

## Department of Crafts

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**C. James Meyer**

Professor and Acting Chair (1973)  
B.A. State University of New York, Albany  
M.F.A. 1973 State University of New York, New Paltz

Hammersley, William S. (1976) Associate Professor  
B.S. University of Wisconsin  
M.F.A. 1976 University of Wisconsin

Hawthorne, John D. (1976) Associate Professor  
B.A. Colorado State University  
M.F.A. 1976 Cranbrook Academy of Art

Ipsen, Kent F. (1973) Professor  
B.S. University of Wisconsin  
M.S. University of Wisconsin  
M.F.A. 1965 University of Wisconsin

Iverson, Susan L. (1975) Professor  
B.F.A. Colorado State University  
M.F.A. 1975 Tyler School of Art

Rosenbaum, Allan (1986) Associate Professor  
B.S. 1978 University of Wisconsin, Madison  
M.F.A. 1986 Virginia Commonwealth University

Thompson, Nancy K. (1969) Professor  
B.S. Ball State Teacher's College  
M.F.A. 1968 Indiana University

The Department of Crafts offers a professionally oriented program that leads to a bachelor of fine arts degree in ceramics, fiberwork/fabric design, glassworking, metalsmithing/jewelry or woodworking/furniture design. Within these areas of specialization, courses are designed to assist students in developing concepts, personal directions and the necessary skills and technical competencies to enable them to pursue

a professional career or graduate study. In addition to the major area of study, students have the opportunity for a diverse education in the liberal arts and humanities. Students are encouraged to select courses in other schools on the Academic Campus that will add to their general knowledge. A student may elect a minor area of study in any department or program offering a minor. The minor can be used to fulfill career objectives or to investigate a discipline of secondary interest.

Career opportunities for crafts majors include setting up an independent studio or gallery, restoration or repair work, teaching or participating in the Artist-in-Residence programs in the public schools, and consulting and designing for industry. Courses in the department are open to all students at the university but must be taken in sequence starting at the 200-level.

### Degree requirements in crafts

The Bachelor of Fine Arts in Crafts Program requires a minimum of 130 credits, including 51 in the major. A minimum of 45 of the 130 credits must be 300-400-level courses. To enroll in an advanced-level craft course, majors must have earned a "C" grade or better in all courses prerequisite for that course.

	Credits
Studios	
Foundation program	16
Basic crafts	16
Orientation to crafts	1
Advanced crafts	32
Painting/printmaking or sculpture studio	8
General studies	
Introduction to the arts	1
English 101, 200	6
Literature	6
Art history and theory	14
Approved electives to include three credits in social sciences, three credits in mathematics,* and four credits in laboratory science	18
Senior seminar	2
Open electives	10
	<hr/> 130

\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

### Minor in crafts

Successful completion of the Art Foundation Program is a prerequisite for the minor concentration which consists of a minimum of 18 credits in crafts courses. Of these 18, a minimum of nine credits must be in upper-level courses.

### Courses in crafts (CRAF)

#### CRAF 201-202 Metalsmithing.

Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Investigation of metal forming processes such as forging, raising, and construction. Research in contemporary and historical metal forms.

#### CRAF 211-212 Jewelry.

Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Investigation of jewelry making processes such as construction, repousse/chasing, surface embellishment, stone setting, and casting. Research in contemporary and historical jewelry forms.

#### CRAF 221 Woodworking Techniques.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits with permission of department chair. Introduction to techniques of woodworking. Includes the use of hand tools; hand and machine joinery; shaping and carving; finishing; and techniques involving jigs and fixtures. Students participate in studio work.

#### CRAF 241 Ceramics: Handbuilding.

Semester course; 2 lecture and 6 studio hours. 4 credits. Basic construction techniques for fabricating ceramic objects. Includes mold-making, slip casting, and press-molding as well as the use and application of low-fire slips, underglazes, glazes, and the firing of these objects in kilns.

#### CRAF 242 Ceramics: Wheelthrowing.

Semester course; 2 lecture and 6 studio hours. 4 credits. Introduction to the use of the potter's wheel. The objective is to develop the skill, dexterity, and coordination required to use the wheel as one tool of the ceramic forming process. Includes the properties and uses of high-fire clays and glazes. Students participate in kiln firings.

#### CRAF 251, 252 Introduction to Glassworking.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An investigation of techniques, tools, equipment, materials involved in hot and cold glassworking processes. First semester covers basic molten-glass furnace techniques such as blowing and casting, mold-making, and Pate de Verre (fusing crushed glass in a mold). Second semester explores colored glass fusing, use of enamels and glazes, mold-making for slumped forms, and stained glass.

#### CRAF 261, 262 Beginning Textiles.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. In the first semester, techniques of tapestry, weaving, spinning, chemical dyeing, feltmaking, and basketry are covered.

Second semester focuses on appliqué, papermaking, trapunto, embroidery, fabric collage, and piecing and quilting. Materials, tools, history, and modern application of each technique will be examined through lectures, demonstrations, and studio work.

#### CRAF 282 Orientation to Crafts.

Semester course; 1 lecture hour. 1 credit. Discussion of a variety of approaches to study within the craft media, stressing elements of creative activity which are basic to any involvement in making visually-oriented objects.

#### CRAF 301, 302/401, 402 Advanced Metalsmithing or Jewelry.

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. 401 and 402 may be repeated up to a maximum of 12 credits. Prerequisite: CRAF 201-202 or 211-212. This course offers opportunity for specialization and development of techniques.

#### CRAF 320 Furniture Design.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: CRAF 221. The course explores the development of ideas through drawings, mock-ups and the planning and execution of a small furniture object utilizing basic and specialized woodworking techniques.

#### CRAF 321, 322/421, 422 Advanced Woodworking and Furniture Design.

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. 421 and 422 may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 221 and 320. Advanced design and construction investigation of varied materials, and machine processes.

#### CRAF 341, 342/441, 442 Advanced Ceramics.

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. 441 and 442 may be repeated for up to a maximum of 12 credits. Prerequisites: CRAF 241 and 242 are the prerequisites for CRAF 341 and 342. CRAF 341 and 342 are the prerequisites for 441 and 442. Advanced problems in the design and production of functional and nonfunctional ceramic products.

#### CRAF 351, 352/451, 452 Glassworking.

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. 451 and 452 may be repeated for up to a maximum of 12 credits. Prerequisite: CRAF 251 and 252. Opportunity for further investigation and specialization in glassworking design and technical mastery.

#### CRAF 361, 362/461, 462 Advanced Textiles.

Semester courses; 2 lecture and 6 or 12 studio hours. 4 or 6 credits. 461 and 462 may be repeated for up to a maximum of 12 credits. Prerequisites: CRAF 261 and 262 or permission of instructor. Emphasis on development and concentrated studio work in contemporary and traditional loom techniques along with continuing individual pursuit of the other textile techniques.

**CRAF 363-364 Fabric Design.**

Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Exploration of pattern as a design concept and the development of technical skills for silk screening on fabric.

**CRAF 367, 368 Tapestry.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Origins of tapestry forms and execution of techniques.

**CRAF 369 Ancient Peruvian Textile Techniques.**

Semester course; 2 lecture and 6 or 12 studio hours. 4 credits. An examination of textile techniques perfected in ancient Peru and their application to contemporary fiber work. pre-Columbian cultures will be studied to understand textile development. Course includes student duplication of techniques to better understand "structure" and the production of a personal object(s) utilizing these techniques and information.

**CRAF 382 Intermediate Crafts Seminar.**

Semester course; 1 lecture hour. 1 credit. This course will explore contemporary developments in the field of crafts. The course will utilize essays, periodical articles, and exhibition catalogues as a catalyst for discussions involving issues such as: tradition and innovation; process and materiality; functionality; decoration; containment; metaphor; figuration; and installation.

**CRAF 409 Summer Metal and Jewelry Workshop.**

Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific metal processes and techniques, such as fabrication, forging, forming, casting, enameling, and electroforming. See the Schedule of Classes for specific course offerings.

**CRAF 429 Summer Woodworking Workshop.**

Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific woodworking processes and techniques, such as joinery methods, laminate bending, steambending, etc. See the Schedule of Classes for specific course offerings.

**CRAF 445 Technological Developments in Ceramics.**

Semester course; 3 lecture hours. 3 credits. An examination of significant developments in the design and technology of ceramics from the prehistoric period to the present. The historical outline will include ceramics of Europe, the Orient, and the Americas. Illustrated lectures.

**CRAF 446 Glaze Technology.**

Semester course; 3 lecture hours. 3 credits. Development, formulation, and application of ceramic glazes. The technology includes high, medium, and low firing ranges as well as color and analysis of glaze materials.

**CRAF 447 Ceramic Technology: Clay, Claybodies, and Slips.**

Semester course; 3 lecture hours. 3 credits. Study of clay from geological origins to practical application. Course

includes development and application of clay bodies in different firing ranges, englobes, and slips.

**CRAF 448, 449/548, 549 Ceramic Workshop.**

Semester courses; 9 studio hours. 3, 3 credits. Exploration in specific ceramic techniques such as raku, salt glaze, primitive firing, low temperature glazing.

**CRAF 455, 456 Survey of Glass.**

Semester courses; 3 lecture hours. 3, 3 credits. An examination of significant technological developments in glass from the past to present. First semester: ancient to 16th century. Second semester: 17th century to contemporary. Illustrated lectures.

**CRAF 459 Summer Glassworking Workshop.**

Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific glassworking processes, such as forming molten glass, casting, and coldworking techniques. See the Schedule of Classes for specific course offerings.

**CRAF 463, 464 Fabric Design.**

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. Development of a personal direction and examination of direct color application techniques such as batik, airbrush, and fabric painting.

**CRAF 469 Summer Textile Workshop.**

Semester course; 3, 6, 9 studio hours. Variable; 1, 2, 3 credits. May be repeated for credit. Prerequisite: Permission of instructor. Exploration of specific textile techniques and processes, such as multiharness weaving, pulled warp, special dye processes, and designing for printed fabrics. See the Schedule of Classes for specific course offerings.

**CRAF 482 Senior Seminar.**

Semester course; 2 lecture hours. 2 credits. Resume and portfolio preparation, promotion of creative work and selling, exhibition opportunities and process, career options, setting up a studio, and other subjects appropriate to the artist/craftsperson. Writing intensive.

**CRAF 491 Topics in Crafts.**

Semester course; 1-3 credits. May be repeated for a maximum of nine credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of crafts. See the Schedule of Classes for specific topic(s) to be offered each semester.

**CRAF 493, 494 Fieldwork.**

Semester courses; 270 clock hours. 6, 6 credits. Prerequisite: Senior standing in the major and permission of chair. Opportunity for practical work experiences. Senior students are placed in professional organizations that offer supervised work or research experience appropriate to their major interests. Participation requires the approval of both the department chair and field supervisor. Students must work 270 clock hours and maintain a daily log of their experiences. Field supervisor will plan student's work and evaluate performance.

**Department of Dance and Choreography****Martha Curtis**

Associate Professor and Chair (1988)  
B.F.A. 1976 North Carolina School of the Arts

Burnside, Chris (1985) Associate Professor

B.F.A. 1969 Virginia Commonwealth University

M.M. 1973 Florida State University

Grubel, Barbara (1998) Assistant Professor

B.F.A. 1982 University of Wisconsin, Milwaukee

M.F.A. 1999 Arizona State University

Jung, Audrey M. H. (1986) Professor

B.A. 1972 University of Hawaii

M.A. 1974 University of Illinois, Urbana-Champaign

C.M.A. 1979 Laban Institute

Richards, Melanie J. (1982) Associate Professor

B.A. University of California, Los Angeles

M.A. 1975 University of California, Los Angeles

Steel, Judith (1989) Assistant Professor

B.S. 1972 Slippery Rock State College

M.A. 1975 University of Colorado

**Emeriti faculty**

Wessells, Frances D., Associate Professor Emerita

B.A. University of Denver

M.A. New York University

The mission of the Department of Dance and Choreography is to create an environment where the student experiences the demands and challenges of the professional dancer/choreographer. In a community setting where communication, mutual respect and self-motivation are encouraged, classes provide the student with disciplined training that will maximize their potential to become dancers of technical excellence, choreographers with original and powerful voices and thinkers with high academic standards.

Students are trained to be performers, choreographers and teachers in this curriculum which emphasizes modern dance and offers dance courses in modern, improvisation, composition, choreography, music for dancers, and dance history, as well as ballet, jazz, tap, African-Caribbean, ballroom, contact improvisation, T'ai Chi, kinesiology, video/choreography, lighting design and dancer as teacher. Additionally, the program provides a variety of experiences in performance, choreography, and production. These offerings enable students to develop as sensitive, expressive artists with professional training in dance technique, a knowledge of dance philosophies, and a foundation in history, enabling them to function as



independent and creative artists in the field of dance.

### Degree requirements in dance and choreography

	Credits
Dance technique	
Modern	24
Ballet	12
Tap	2
African-Caribbean, T'ai Chi or jazz	2
Dance workshop	8
Improvisation	4
Dance composition	6
Repertory	3
Music for dancers	3
Music appreciation	3
Dancer as teacher	3
Dance production workshop	2
Choreography performance	6
Senior project	3
Dance history and theory	
DANC 107 Contemporary Dance Perspectives	2
DANC 308 Dance History	3
DANC 313 Dance in World Cultures	3
Approved dance electives	2 or 3
Contact improvisation or	
Video choreography workshop	
General studies*	
English 101-200	6
Kinesiology	3
Art history 103 or 104	3
Social/behavioral sciences elective	3
Math elective**	3
Ethics elective	3
Open electives	13 or 14
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\* Students must include one writing intensive course (WI) as part of their general education electives.

\*\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

The bachelor of fine arts degree program in dance/choreography requires 126 credits, with 88 of those credits as the core curriculum. Dance majors are encouraged to take two technique classes daily, including the required modern technique class. The continuous study of ballet is a strong component of the curriculum, and dance majors are required to take 12 credits in ballet. Beyond the first level of technique, students progress to the higher levels

through audition or with permission of the instructor. Upper levels of technique are repeatable for credit. All dance majors must complete modern technique level 402 to be eligible for graduation with a bachelor of fine arts in dance and choreography. Exceptions are made only when the student demonstrates outstanding work in the creative track. The chair, in consultation with the full-time faculty, must approve exceptions. Within the core are opportunities for independent study, including a possible semester spent in an intensive investigation of a dance-related subject in the field.

The VCU dance program provides opportunities for students to interact with faculty and guest artist mentors in classes, advising sessions, concerts and in creative projects. Formal evaluation procedures include a career evaluation during the second semester of the freshman year and a sophomore readmittance audition at the end of the sophomore year. The purpose of these evaluations is to assess each student's progress in relationship to the standards of the program.

Before graduation, students must complete a senior project which is a practical presentation in both performance and choreography. Senior projects are approved by the chair in consultation with the full-time faculty. Approval is based on the quality of a proposal written by the student and an assessment of the student's overall academic record.

Within the School of the Arts, dance students have frequent opportunities to work collaboratively with other students in the arts. Possibilities include the visual arts, participation in multimedia events, and productions outside the dance department.

Any dance major can perform in numerous formal concerts, informal showings, and lecture-demonstrations produced by the department.

Opportunities also are available for training in teaching, but students interested in earning state certification should consult their advisers.

An audition is required for acceptance into the dance program. Applicants for the bachelor of fine arts in dance/choreography will follow the admissions guidelines for arts students as described in the earlier portion of this section of the bulletin.

### Minor in dance

Any VCU student can declare a minor in dance. The minor consists of 27 credits. Fourteen of those credits must be taken in approved dance technique — a combination of modern, ballet, tap, T'ai Chi, contact improvisation, and African Caribbean. Dance minors must also take DANC 105-106 Improvisation, DANC 205 Composition, DANC 206 Composition or DANC 319-320 Video/Choreography Workshop, and DANC 308 Dance History.

### Courses in dance and choreography (DANC)

#### DANC 101-102 Modern Dance Technique I.

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: Dance major or permission of chair. Corequisite: DANC 101L-102L. Beginning study and training in principles of modern dance technique. Emphasis is on body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness.

#### DANC 101L-102L Modern Dance Technique I Laboratory.

Continuous course; 3 studio hours. 1-1 credit. Required of dance majors, concurrent with DANC 101-102. An extension of DANC 101-102.

#### DANC 105-106 Improvisation.

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. An exploration of spontaneous body movement with the purpose of increasing body awareness, movement invention, and movement creativity.

#### DANC 107 Contemporary Dance Perspectives.

Semester course; 2 lecture hours. 2 credits. Prerequisite: Dance major or permission of chair. This is the first in a sequence of dance courses that fulfills one of the general education writing intensive requirements for dance majors. An introduction and orientation to various aspects of contemporary dance as an art form. Students will engage in the viewing and discussion of film, videos and dance concerts.

#### DANC 109, 110/209, 210/309, 310/409, 410 Dance Workshop.

Semester courses; 2 studio hours. 1 credit. Prerequisite: Dance major or permission of instructor. Group exploration of techniques related to all areas of dance.

#### DANC 111-112 Ballet Technique I.

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Beginning study of the principles of ballet technique. Emphasis upon vocabulary terms, body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness to move the body in the ballet style.

#### DANC 113 Ballet Technique I.

Semester course; 1 lecture and 2 studio hours. 2 credits. This course may be repeated for a maximum of four credits on the

recommendation of the chair. Prerequisite: DANC 111-112 or permission of instructor. A continuation of study of ballet technique at the beginning-level. Emphasis upon a stronger, more exact performance of the basic ballet steps, focusing on correct alignment, development of the body, and rhythmic and kinesthetic awareness.

#### **DANC 114, 214, 314, 414 Summer Dance Workshop.**

Semester courses; variable; 1, 3 credits per semester. May be repeated for credit. Flexible course offerings in dance technique, improvisation, composition, rhythmic training, and repertory. See the Schedule of Classes for specific course offerings.

#### **DANC 121, 122/AFAM 121, 122 Tap Technique I.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Beginning study and training in the principles of tap technique with emphasis upon style, body alignment, spatial patterning, flexibility, strength, and kinesthetic awareness to move the body in the style required for tap dancing.

#### **DANC 126, 127/AFAM 126, 127 African-Caribbean Dance I.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Dance based on the movements and rhythms of Africa and the Caribbean.

#### **DANC 141, 142 Ballroom Dancing.**

Semester courses; 2 studio hours. 1, 1 credit. A study of basic ballroom dance steps and practice in their performance.

#### **DANC 151, 152/AFAM 151, 152 Jazz Dance Technique I.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: DANC 102 or permission of instructor. Study and training in the principles and concepts of jazz technique. Emphasis on body alignment, flexibility, balance, rhythmic awareness, and mastery of isolated movements of body parts. The course includes the exploration of the relationship between jazz music and jazz dance.

#### **DANC 161, 162/261, 262/361, 362/461, 462 Rehearsal and Performance.**

Semester courses; hours to be arranged. 1 to 3 credits. Prerequisite: Permission of instructor. Open to nonmajors. Each student is expected to devote a minimum of 50 hours per credit per semester to receive credit. Dance rehearsals and production of work for a major dance concert. Selected sections offered for pass/fail.

#### **DANC 171, 172 T'ai Chi.**

Semester courses; 1 lecture and 2 studio hours. 2 credits. Study and practice of T'ai Chi, a Chinese exercise form, which is designed to bring one to full potential through balancing, aligning, and breathing exercises. The short Yang form, based on Taoist principles, strengthens the body while allowing for deep relaxation to take place. Application of T'ai Chi to creative dance techniques is explored as a springboard for improvisation.

#### **DANC 183, 184 Introduction to Modern Dance Technique.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. For non-dance majors. Experiential introduction to basic movement principles, body alignment and the elements of modern dance.

#### **DANC 201-202 Modern Dance Technique II.**

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of eight credits on the recommendation of the chair. Prerequisite: DANC 102 or permission of instructor. Corequisite: DANC 201L, 202L. Further study and training in the principles of modern dance technique on a low intermediate-level with the expectation of better coordination of all elements into a sense of dance.

#### **DANC 201L-202L Modern Dance Technique II Laboratory.**

Continuous course; 3 studio hours. 1-1 credit. This course may be repeated for a maximum of four credits on the recommendation of the chair. Prerequisite: DANC 102 and DANC 102L or permission of instructor. Corequisite: DANC 201-202. An extension of DANC 201-202.

#### **DANC 205-206 Composition.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Prerequisite: DANC 105-106, Improvisation and Music Appreciation MHIS 243, or permission of instructor. An introduction to the basic elements of choreography.

#### **DANC 211-212 Ballet Technique II.**

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of 8 credits on the recommendation of the chair. Prerequisite: DANC 112 or permission of instructor. Further training and practice in ballet technique. Emphasis upon a stronger, more exact performance of the ballet steps, focusing still on correct alignment, development of the body, and kinesthetic awareness.

#### **DANC 221, 222 Tap Technique II.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisite: Audition or permission of instructor. Further study and training in the principles of tap technique.

#### **DANC 232 Music for Dancers.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MHIS 243 and DANC 101 or permission of instructor. An examination of the various traditional and nontraditional concepts which the dancer uses in collaboration with music. Course includes lecture, reading, listening, and movement assignments. Focus will be on the dancer's intelligent and justifiable choice of music through movement analysis.

#### **DANC 243 Dynamic Alignment.**

Semester course; 1 lecture and 2 studio hours. 2 credits. Study of the basic principles of mechanical balance and postural alignment. Practice in the application of the major theories of alignment and techniques of realignment. Corrective exercises, breathing techniques, relaxation, guided imagery, self-awareness exercises, and body image work will be learned and practiced.

#### **DANC 251, 252 Jazz Technique II.**

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Prerequisites: DANC 151, 152 or permission of instructor. An in-depth study of movement styles and qualities in jazz dance. Advanced work on integrating music and movement with focus upon chronology of jazz music and corresponding dance forms.

#### **DANC 260 Dance Production Workshop.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: Dance major or permission of instructor. An introduction to the basic principles of dance lighting and technical theatre through lecture, practical demonstration and discussion.

#### **DANC 291 Topics in Dance.**

Semester course; 1-4 credits. May be repeated for a maximum of eight credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the Schedule of Classes for specific topic(s) to be offered each semester.

#### **DANC 301-302 Modern Dance Technique III.**

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of eight credits on the recommendation of the chair. Prerequisite: DANC 202 or permission of instructor. Corequisite: DANC 301L-302L. High intermediate study and training in principles of modern dance technique. Movement studies demanding greater strength and flexibility. Spatial patterns demanding increased coordination, kinesthetic awareness, and aesthetic sensitivity.

#### **DANC 301L-302L Modern Dance Technique III Laboratory.**

Continuous course; 3 studio hours. 1-1 credit. This course may be repeated for a maximum of four credits on the recommendation of the chair. Prerequisite: DANC 202 and DANC 202L or permission of the instructor. Corequisite: DANC 301-302. An extension of DANC 301-302.

#### **DANC 303-304 Choreography/Performance.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Prerequisites: Composition DANC 205-206 and Music for Dancers DANC 232, or permission of instructor. The craft of choreography and performing techniques are explored extensively as students develop solo and group pieces while rotating in the roles of choreographer/director and performer.

#### **DANC 308 Dance History.**

Semester course; 3 lecture hours. 3-3 credits. Prerequisite for dance majors: DANC 107 or permission of instructor. This is the second in a sequence of dance courses that fulfills one of the general education writing intensive requirements for dance majors. A study and analysis of the history of western theatrical dance forms including motivations, philosophies, and styles from ancient Greece through specific contemporary dance artists of the 20th century. This course will include lectures, readings and research. Students will engage in the viewing and discussion of film, videos, and dance concerts.

**DANC 311-312 Ballet Technique III.**

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. This course may be repeated for a maximum of 12 credits on the recommendation of the chair. Prerequisite: DANC 212 or permission of instructor. Continued development in the skills and aesthetics of ballet.

**DANC 313 Dance in World Cultures.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite for dance majors: DANC 107 and 308 or permission of instructor. This course is the third in a sequence of dance courses that fulfills one of the general education writing intensive requirements for dance majors. Students learn and participate in dance styles of various world cultures as they study cultural traditions and how they are expressed in movement. No dance experience necessary. This course will include lectures, readings, research and discussion. Students will engage in the viewing and discussion of films, videos and dance concerts.

**DANC 315, 316 Contact Improvisation.**

Semester courses; 1 lecture and 2 studio hours. 2 credits. Prerequisite: DANC 101, 102 or permission of instructor. Exploration of the technique of partnering and the exchange of weight in an improvisational format. Emphasis is on a shared process that explores gravity, lifting, and the give and take of body weight.

**DANC 319, 320 Video/Choreography Workshop.**

Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisite: Experience in movement, performance, and/or video/film, or permission of instructor. Students gain practical skills as well as basic theoretical foundation in the principles of working with video and choreography.

**DANC 343 Body Imagery.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: Permission of instructor. The study of body/mind imagery as a source of exploration that includes movement qualities, dynamics, and vocabularies. Students gain insight into their inner resources as a base for outer expression.

**DANC 371, 372 Repertory.**

Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisites: DANC 101-102 and permission of instructor. Study and rehearsal of roles in choreography produced by the faculty and/or guest artists, with the objective of achieving a performance level.

**DANC 401-402 Modern Dance Technique IV.**

Continuous course; 1 lecture and 2 studio hours. 2-2 credits. Prerequisite: DANC 302 or permission of instructor. Corequisite: DANC 401L-402L. Advanced study and training in modern dance technique. This course may be repeated for a maximum of 12 credits on the recommendation of the department chair.

**DANC 401L-402L Modern Dance Technique IV Laboratory.**

Continuous course; 3 studio hours. 1-1 credit. This course may be repeated for a maximum of four credits on the recommendation of the department chair. Prerequisite: DANC

302 and 302L or permission of the instructor. Corequisite: DANC 401-402. An extension of DANC 401-402.

**DANC 407 The Dancer as Teacher.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: Permission of instructor. The student learns to analyze and communicate movement in a variety of teaching situations. The student will have an opportunity to observe different teaching techniques and to practically apply learned teaching concepts and theories.

**DANC 450 Professional Project.**

Semester course; 3-9 credits. May be repeated for a maximum of twelve credits. An individualized program in research and/or practicum within a professionally-oriented organization, subject to approval of the department faculty.

**DANC 451 Careers in Dance.**

Semester course; 3 lecture hours. 3 credits. Realistic aspects of the dance profession, as performer, teacher, and researcher. The student's learning experience culminates in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

**DANC 490 Senior Project.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: DANC 303-304 and approval of the chair. The culmination of the student's learning experience in a final project that enhances and challenges the student in both areas of performance and choreography. The project must attain public performance status.

**DANC 491 Topics in Dance.**

Semester course; 1-4 credits. May be repeated for a maximum of eight credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of dance. See the Schedule of Classes for specific topic(s) to be offered each semester.

## Department of Fashion Design and Merchandising

**Christina O. Lindholm**

Associate Professor and Chair (1995)  
B.S. and M.S. 1980 University of Missouri

**Karen M. Guthrie**

Associate Professor and Assistant Chair (1984)  
B.S. and M.Ed. Virginia Commonwealth University

Caskey, Kristin A. (1997) Assistant Professor

B.S.S. Cornell College

B.F.A. Parsons School of Design

M.F.A. 1994 Printmaking Cranbrook Academy of Art

Guthrie, Kimberly (1998) Assistant Professor

B.F.A. Virginia Commonwealth University

M.A.E. Virginia Commonwealth University

Swartz, Henry C. (1987) Associate Professor

B.F.A. 1971 Pratt Institute

M.F.A. 1977 Virginia Commonwealth University

Watson, Janice M. (1982) Associate Professor

B.F.A. 1973 Moore College of Art

M.A. 1988 Virginia Commonwealth University

Wilkins, Sandra B. (1978) Associate Professor

B.F.A. 1972 Virginia Commonwealth University

**Emeriti faculty**

Windmuller, Otti Y., Professor Emeritus

Journeyman Costume Designer, Trained in Germany

B.F.A. Virginia Commonwealth University

Diploma Munich

The Department of Fashion Design and Merchandising offers three tracks: fashion design, leading to a bachelor of fine arts degree; fashion merchandising, leading to a bachelor of arts degree; and home fashions merchandising, leading to a bachelor of arts degree.

The fashion design curriculum offers technical courses which provide skills required in the fashion industry. Individual designs are presented in two-dimensional form, developed and perfected through techniques used in the fashion industry, and then executed in final and three-dimensional form in fabrics appropriate to the design. Expenses for fabrics and equipment average from \$200 to \$600 per semester.

The major in fashion merchandising represents a strong background from marketing, business and specialized professional courses with an emphasis on globalism. Students are directed toward assignments that will develop their skills in research, writing, presentation and critical thinking. Graduates find career opportunities in fashion forecasting, product development, advertising and promotion, retail management, buying, and international marketing.

Home fashions is a new track which focuses on furnishings, accessories and textiles specific to the home furnishings industry. The home furnishings industry is one of the fastest growing areas of the fashion market. Objectives for students in the track are to gain product knowledge, understand consumer behavior and develop marketing strategies for successful employment with retail organizations and major manufacturers.

The tracks are extremely time consuming. Students are expected to put class attendance and study time above other campus activities or employment.

Students must take classes in the sequence prescribed by the department and adhere to all prerequisites. Failure

to comply can lengthen the number of semesters necessary for completion of degree requirements.

Internships provide not only experience, but industry contacts and are strongly recommended. They may be conducted during the fall, spring, or summer semesters.

### Degree requirements in fashion design

	Credits
Foundation program	
Studios	16
Professional courses	
Construction methods, design, draping, patternmaking, drawing, tailoring, textiles, fashion history, and fashion seminar	63
General studies	
English, art history, literature, introduction to the arts, social/behavioral sciences, natural science, mathematics,* and free electives	47
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\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

### Degree requirements in fashion merchandising

	Credits
Professional education	56
Computers	
Fashion industry	
Visual merchandising or fashion promotion	
Supervision and management	
Survey of the fashion environment	
Textiles for the apparel industry	
20th century fashion	
Computations for merchandise planning and control	
Buying simulation	
Fashion forecasting	
Importing/exporting fashion	
Advanced store development	
Fashion seminar	
Art history	
General education	28
Business courses	27
Approved electives	15
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### Minor in fashion merchandising

Students from any department in the university may declare a minor in fashion merchandising, which consists of 18

credits. The following nine credits are required: FASH 240 Survey of the Fashion Industry I; FASH 241 Survey of the Fashion Industry II; and FASH 341 Merchandise Planning and Control. With the guidance of a track adviser, students will choose nine additional credits from the list of professional fashion merchandising courses; six of these credits must be at the 300 or 400 level. A cumulative GPA of 2.0 must be attained in these courses.

### Degree requirements in home fashions merchandising

	Credits
Professional education	52
Interior design	
Computers	
Fashion industry	
Visual merchandising	
Supervision and management	
Textiles	
Computations for merchandise planning and control	
Buying simulation	
Fashion forecasting	
Importing/exporting fashion	
Advanced store development	
Fashion seminar	
Art history	
General education	42
Business courses	24
Approved electives	8
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### Courses in fashion design and merchandising (FASH)

#### FASH 145 Computers for Fashion I.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. To introduce the students to basic principles of the computer and to become familiar with it as a drawing and communication tool as used in the fashion industry.

#### FASH 201 Construction Techniques.

Semester course; 1 lecture and studio hours. 3 credits. The basic principles involved in garment construction with emphasis on professional design-room practices in sewing, pressing and finishing of garments. Knowledge of basic sewing is advisable.

#### FASH 202 Draping.

Semester course; 1 lecture and studio hours. 3 credits. Basic principles of 3 dimensional patternmaking by draping muslin on a dress form. Student will be required to purchase the specified dress form.

#### FASH 203-204 Patternmaking.

Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Basic principles of patternmaking, developing various styles

from master patterns, and creating designs to be constructed in muslin. Students will also draft a set of master patterns and learn to "true" the pattern to produce production ready patterns.

#### FASH 205-206 Fashion Drawing I.

Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Introduction to the fashion figure working from models and photographs. Covers flat drawing techniques and fashion design theory. Explores different media and the use of color.

#### FASH 210 Visual Merchandising.

Semester course; 3 lecture hours. 3 credits. Theory and practical application of visual merchandising techniques in the fashion industry. Development of design concepts, fixturing, layout and presentation for retail, manufacturing, and special events. Use of computer-aided design.

#### FASH 211, 212 Garment Construction.

Semester courses; 1 lecture and 2 studio hours. 2, 2 credits. Not open to fashion design majors. Students are exposed to basic sewing with emphasis on detailed construction, basic fitting, and pressing techniques. Simple garments will be constructed from commercial patterns.

#### FASH 240 Survey of the Fashion Industry I.

Semester course; 3 lecture hours. 3 credits. A survey of the apparel industry emphasizing the role of the designer and the various stages of production.

#### FASH 241 Survey of the Fashion Industry II.

Semester course; 3 lecture hours. 3 credits. An analysis of the apparel industry emphasizing retail aspects.

#### FASH 243 Supervision and Management.

Semester course; 3 lecture hours. 3 credits. The study of human relations as it applies to the fashion industry. Emphasis is placed on basic leadership skills to effectively supervise people from a variety of cultures. Topics include team building, negotiation, time and stress management, and communication.

#### FASH 245 Computers for Fashion II.

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Explore the world of computers while applying the principles of imaging and desktop publishing as they are used in the fashion industry.

#### FASH 250 Concepts of Fashion Merchandising Environment.

Semester course; 3 lecture hours. 3 credits. Basic research techniques and analysis skills for evaluating contemporary fashion and apparel topics.

#### FASH 290 Textiles for the Fashion Industry.

Semester course; 2 lecture hours and 1 laboratory hour. 3 credits. This course is designed to develop an understanding of the factors which influence the tactile behaviors of fabrics during garment design, manufacture and wear. Apparel fiber construction, finish and properties both natural and man-made will be analyzed.

**FASH 301, 302 Design I Studio.**

Semester course; 1 lecture and 4 studio hours. 3 credits.  
May be repeated. Prerequisite: Completion of all sophomore studio courses. A series of courses which focus on selected topics in design, reflecting current fashion emphasis. See Schedule of Classes for current offerings.

**FASH 319 20th Century Fashions.**

Semester course; 3 lecture hours. 3 credits. An in-depth study of 20th century fashions from the historical and socioeconomic point of view. Hands-on examination of vintage garments and field trips to museum collections. Writing intensive.

**FASH 341 Merchandise Planning and Control.**

Semester course; 3 lecture hours. 3 credits. Theory and mathematical application of the major elements of retail buying and merchandising. Discussion covers planning and control of inventory, profit analysis, merchandise pricing, and purchase negotiation.

**FASH 342 Retail Buying Simulation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 341. Practical application of retail buying skills in relation to the calculations for a six month buying plan for a department within a department store. The simulation includes projection of sales, stock levels, markdowns, purchases, gross margin, markup, etc.

**FASH 343 Fashion Forecasting.**

Semester course; 3 lecture hours. 3 credits. Using basic principles to identify, track and analyze current trends, students will develop a fashion forecast. Demographic, economic, social, and historical forces of behavior will be evaluated.

**FASH 350 Fashion Promotion.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Through lecture and field experience, students are exposed to technical and creative aspects of fashion promotion and public relations. A variety of media are utilized. Students may be required to spend time outside the classroom on promotional activities.

**FASH 360 Importing and Exporting Fashion.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FASH 190 and FASH 240. An overview and introduction to import/export theory, government regulations and global sourcing. Students will gain insight to the dynamics and cultures of the international fashion marketplace.

**FASH 390 Historic and Ethnic Textiles.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 290 or IDES 446 or permission of instructor. An examination of the history of textile design and production around the world.

**FASH 391 Fashion Workshop.**

Semester course; variable; 1-3 credits per semester. May be repeated for a maximum total of six credits. A topical workshop offered in various areas of fashion not included in the regular curriculum. See the Schedule of Classes for particular areas to be covered each semester.

**FASH 401, 402 Design II Studio.**

Semester course; 1 lecture and 4 studio hours. 3 credits.  
May be repeated. Prerequisites: Completion of all sophomore studio courses and permission of instructor. A series of upper level design classes for the advanced or skilled student, reflecting current topics in the fashion industry. See Schedule of Classes for current offerings.

**FASH 403 Design Theory and Illustration I.**

Semester course; 1 lecture and 4 studio hours. 3 credits.  
May be repeated. Prerequisite: Completion of all Department of Fashion sophomore studio courses. A series of design theory and illustration topics that address current fashion and support the Department of Fashion design courses. See Schedule of Classes for current offerings.

**FASH 404 Design Theory and Illustration II.**

Semester course; 1 lecture and studio hours. 3 credits. May be repeated. Prerequisites: Completion of all Department of Fashion sophomore studio courses and permission of instructor. A series of advanced design theory and illustration topics that address current fashion, challenge the skilled student and support the Department of Fashion design courses. See Schedule of Classes for current offerings.

**FASH 445 Advanced Application in Store Development.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FASH 341. Studies operational functions as related to the objective and decision making procedures inherent in successful small business retailing. Quantitative strategies will be applied as students develop a model plan for a retail business.

**FASH 490 Fashion Seminar.**

Semester course; 3 lecture hours. 3 credits. A professional seminar for senior fashion majors. Lectures will cover career opportunities, job preparation, and current events impacting global fashion industry.

**FASH 493 Fashion Internship.**

1-3 credits. It may be a single internship for three credits or several (maximum three) totaling three credits. Open to junior and senior-level fashion majors only. A practicum in which students apply on-the-job the formal classroom and studio training they have received in their option (design, illustration, merchandising) on campus.

**Department of Interior Design****M. Buie Harwood**

Professor and Chair (1985)  
B.F.A. 1972 and M.F.A. 1973 Louisiana Tech University

Gao, Chaoyi (1993) Assistant Professor

B.A. 1982 Suzhou Institute of Silk Textile Technology  
M.A. 1988 Central Academy of Arts and Design  
M.F.A. 1993 Virginia Commonwealth University

Heneveld, Paula (1998) Assistant Professor

B.S. University of Michigan  
M.A. Cornell University

Marlow, Craig H. (1977) Associate Professor

B.F.A. 1971 and M.F.A. 1973 Louisiana Tech University

Whitehead, W. Camden (1985) Associate Professor

B.A. 1976 Averett College  
M.Arch. 1980 Virginia Polytechnic Institute and State University

**Emeriti faculty**

Field, Jerry J., Professor Emeritus

B.S. Virginia Commonwealth University  
Diploma Parsons School of Design

Gunter, Ben D., Professor Emeritus

A.B. Bridgewater College  
B.F.A. Virginia Commonwealth University  
M.Ed. University of Virginia

Hamilton, Dorothy Tennent, Associate Professor Emerita  
Certificate Virginia Commonwealth University

Hester, Robert F., Professor Emeritus

B.A. Wake Forest College  
Diploma Parsons School of Design  
Graduate Study University of London  
M.A. Cornell University  
National Trust Summer School (England)

The Department of Interior Design offers a FIDER-accredited, professional program which seeks to produce competent creative designers whose design solutions are based on human response in the contemporary environment. Mastery of design skills, development of productive habits, knowledge of resources, and an awareness of interrelated disciplines equip the student with the tools and expertise necessary to pursue creative design positions or to enter programs of advanced study.

Admission to the degree program follows successful completion of the freshman Art Foundation Program, or for transfer students, equivalent preparation at other institutions. Students are required to purchase a laptop computer and software with enrollment in computer graphics courses. The make of the computer and the software is determined by the department; alternates are based on instructor approval. The total cost will be approximately \$3,500.

The department sponsors numerous field trips that enable students to gain exposure to the work of prominent designers. The cost of voluntary trips should not exceed \$250 annually.

The department has several scholarships and awards available to students. For more information contact the department chair.

**Degree requirements in interior design**

General education  
English 101, 200

Credits

Mathematics*	3
Natural science/laboratory	4
Sociology/psychology	3
Open elective (design history)	3
Open elective (ethics)	3
Open electives	9
Art Foundation Program	25
Interior design	
Design	26
Communication graphics	12
Building and interior components	18
Profession	5
Theory and history	9
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\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

## Courses in interior design (IDES)

### IDES 103-104 Introductory Studio Course.

Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. Offered evenings only. Not open to interior design majors. A practical course in which the student becomes familiar with fundamentals of interior design through work with floor plans, furniture selection and arrangement, floor and wall compositions, color harmony, wallpaper, and other aspects of design.

### IDES 201 Introductory Interior Design Studio.

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: All Art Foundation Program studio courses and concurrent enrollment in IDES 231 and IDES 211 or 212. Interior design majors only; other School of the Arts majors by approval. Introduction to identification and applications of fundamental interior design issues through applied projects. Emphasis includes: developing design ideas, understanding design philosophies, design principles and elements, human factors, defining and solving problems creatively, analyzing spatial and functional requirements, applying design processes, creating an aesthetic space, and preparing a presentation as related to interior design.

### IDES 211 Interior Graphics — Manual.

Continuous course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: All Art Foundation Program studio courses and concurrent enrollment in IDES 201, 301, 302, 303, or 304 and completion of, or concurrent enrollment in IDES 231. Interior design majors only; other School of the Arts majors by approval. Introduction to manual graphic communication techniques in interior design including drafting, sketching, rendering, perspective drawing, presentation formats, and model making for professional graphic presentations.

### IDES 212 Interior Graphics — Computer.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: All Art Foundation Program studio courses and

concurrent enrollment in IDES 201, 301, 302, 303, or 304 and completion of /or concurrent enrollment in IDES 231. Interior design majors only; other School of the Arts majors by approval. Laptop computer required. Introduction to computer graphic communication techniques in interior design drafting, rendering, perspective drawing, presentation formats, and 3D imaging for professional graphic presentations.

### IDES 231 Introduction to the Interior Design Profession.

Semester course; 2 lecture hours. 2 credits. Required of all incoming interior design majors. Introduction to the profession of interior design and the responsibilities of the interior designer.

### IDES 241 Physical and Social Behavior.

Semester course; 3 lecture hours. 3 credits. Prerequisite: IDES 231. Theories of behavioral and social aspects of interior design. Study of how people interpret, evaluate, and act in the built environment. Social, cultural, and economic factors are included.

### IDES 251 History of Interior Environments.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ARTF 105-106. Study of the major theories and styles of the interior environments and furnishings of the 18th-20th centuries. Contemporary analysis of cultural conditions and the manner in which designers and architects respond to those conditions. Writing intensive.

### IDES 301, 302, 303, 304 Interior Design Studio.

Semester course; 2 lecture/seminar and 6 studio hours. 4 credits. Prerequisites: IDES 201 and 231, and concurrent enrollment in IDES 211, 212, 311, or 312. Interior design majors only. Discussion and application of design philosophies, theories and creative design strategies at the intermediate level. Emphasis includes: research, survey and analysis, design processes, spatial and functional analysis, design elements, principles, human factors, creative problem solving, code requirements, selection of interior components, and preparation of a presentation. Topics will vary by sections and will be listed in the semester Schedule of Classes.

### IDES 311 Advanced Interior Graphics - Manual.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: IDES 211. Interior design majors only. Advanced manual graphic communication techniques in interior design including drafting, sketching, rendering, perspective drawing, presentation formats, and model making for professional graphic presentations.

### IDES 312 Advanced Interior Graphics — Computer.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisite: IDES 212. Interior design majors only. Laptop computer required. Advanced computer graphic communication techniques in interior design drafting, rendering, perspective drawing, presentation formats, and 3D imaging for professional graphic presentations.

### IDES 321 Interior Materials and Textiles.

Semester course; 3 lecture hours. 3 credits. Prerequisites: ALL ARTF studio courses and IDES 231 or comparable

experience by approval. Interior design and School of the Arts majors only. Investigation and practical application of materials and textiles in interior environments.

### IDES 322 Color in Interior Environments.

Semester course; 3 lecture hours. 3 credits. Prerequisites: All Art Foundation Program studio courses and IDES 231 or comparable experience by approval. Interior design and School of the Arts majors only. Advanced study of color and its impact on interior spaces; theory and practical applications.

### IDES 323 Light in Interior Environments.

Semester course; 3 lecture hours. 3 credits. Prerequisites: All Art Foundation Program studio courses, IDES 231, and IDES 201, 211 or 212, or comparable experience by approval. Interior design and School of the Arts majors only. The study of illumination and its impact on interior spaces; theory and practical applications.

### IDES 324 Furniture Design.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: All Art Foundation Program studio courses and IDES 231 and IDES 201, 211 or 212, or comparable experience by approval. Interior design, crafts, sculpture, and theater design majors only. Advanced study of furniture design and custom millwork as related to the design of interior environments. Original student designs are developed through the study of structure and materials.

### IDES 401 Senior Interior Design Studio.

Semester course; 3 lecture/seminar and 9 studio hours. 6 credits. Prerequisites: IDES 201, 211, 212, 231, 241, 251, 301, 302, 303, 304, 321, 322, 323; enrollment previously or concurrently in IDES 311 or 312; enrollment the semester before or concurrently in IDES 441. Interior design majors only. Advanced design experience of student's choice of an interior environment of complex scope and scale to meet the needs of specific clients and prepare students for the practice of the profession. The project addresses issues of design of the 21st century and integrates all aspects of the curriculum.

### IDES 421 Construction Documents.

Semester course; 1 lecture and 6 studio hours. 3 credits. Prerequisites: All Art Foundation Program studio courses and IDES 201, 231, 212, 312 and concurrent enrollment in IDES 301, 302, 303, 304, or 401. Interior design majors only. Laptop computer required. Study of construction documents on the computer as related to the design of interior environments.

### IDES 422 Building Systems.

Semester course; 3 lecture hours. 3 credits. Prerequisites: All Art Foundation Program studio courses and IDES 201 and 231. Interior design majors only. Contemporary theories and techniques in the design of buildings as related to interior design, small structural considerations, HVAC, acoustics, plumbing, and the attributes of materials.

### IDES 431 ID Business Practices.

Semester course; 3 lecture hours. 3 credits. Prerequisites: IDES 201 and 231. Interior design majors only. Writing intensive. Advanced study of the interior design profession as related to

professional and business practices including: responsibilities, services, ethics, business and project management, and marketing.

#### **IDES 441 Senior Design Seminar.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: IDES 201, 211, 212, 231, 241, 251, 301, 302, 303, 304, 321, 322, 323; previous concurrent enrollment in IDES 311 or 312; concurrent enrollment or enrollment the following semester in IDES 401. Interior design majors only. Discussions of current design theories, issues, and concerns of the built environment, futures study and the global community.

#### **IDES 491 Topics in Interior Design.**

Semester course; 1-4 credits. May be repeated for a maximum of eight credits. Prerequisite: Permission of the instructor. An in-depth study of a topical issue in interior design. See the Schedule of Classes for specific course offerings.

#### **IDES 493 Interior Design Internship.**

Semester course; 3 credits. Prerequisite: Consent of coordinator and department chair. Interior design majors only. Supervised practical work experiences are coordinated with professional interior designers in the field. Graded as pass/fail.

## **Department of Music**

### **John Guthmiller**

Associate Professor and Acting Chair (1988)  
B.M.E. 1974 Murray State University  
M.M. 1976 Florida State University  
D.M.A. 1982 University of Colorado

Austin, Terry L. (1986) Associate Professor  
B.M.E. 1975 Indiana University  
M.A. 1978 University of Hawaii  
Ph.D. 1984 University of Wisconsin

Batty, L. Wayne (1949) Professor  
B.M.Ed. Illinois Wesleyan University  
B.M. Kansas City Conservatory  
M.M. Chicago Musical College  
M.M. 1949 Roosevelt University

Bick, Donald A. (1974) Associate Professor  
B.M. 1970 Eastman School  
M.M. 1974 University of Maryland

Bilyeu, Landon A. (1974) Associate Professor  
B.M. Centenary College  
M.M. 1964 University of Tulsa

Bilyeu, Francile (1984) Assistant Professor  
B.M. 1962 Kansas State University  
M.M. 1963 University of Tulsa

Brooks, Christopher A. (1990) Associate Professor  
B.A. University of Maryland  
M.A. University of Michigan  
M.M. and Ph.D. University of Texas, Austin

Day, Melanie Kohn (1987) Assistant Professor  
B.A. 1975 Maryville College  
M.M. 1978 Boston University  
M.M. 1980 Boston University

Donnell, Cynthia S. (1979) Associate Professor  
B.M.E. University of North Carolina, Greensboro  
M.M. 1974 University of North Carolina, Greensboro

Guerard, Sandra L. (1982) Associate Professor

B.S. Danbury State College  
M.A. 1973 University of Connecticut  
Ph.D. 1981 University of Connecticut

Hammel, Bruce (1988) Associate Professor  
B.M.E. 1978 State University of New York, Potsdam  
M.M. 1981 University of Michigan  
D.M. 1989 Florida State University

Lohuis, Ardyth J. (1969) Professor  
B.S.M. Illinois Wesleyan University  
M.M. Northwestern University  
D.M.A. 1970 University of Cincinnati, College-Conservatory of Music

Marrion, Melissa W. (1963) Professor  
B.M. 1961 University of Cincinnati College-Conservatory of Music  
M.M. 1963 University of Cincinnati College-Conservatory of Music

Murray, Robert P. (1978) Professor  
B.M. American Conservatory of Music  
M.M. American Conservatory of Music  
D.Mus. 1976 Indiana University

Newlin, Dika (1978) Professor  
B.A. Michigan State University  
M.A. University of California  
Ph.D. 1945 Columbia University

Patykula, John T. (1984) Associate Professor  
B.M. 1973 North Carolina School of the Arts  
M.M. 1982 Virginia Commonwealth University

Richards, Douglas J. (1979) Associate Professor  
B.M. Berklee College of Music  
M.M. 1973 Florida State University

Vlahcevic, Sonia K. (1967) Professor  
B.A. New England Conservatory  
M.M. New England Conservatory  
Ph.D. 1975 Catholic University

Walter, Ross (1998) Assistant Professor  
B.M.E. University of Idaho  
M.M. Louisiana State University  
D.M.A. Louisiana State University

West, Charles W. (1987) Professor  
B.M.B.A. 1971 University of Northern Colorado  
M.F.A. 1973 University of Iowa  
D.M.A. 1975 University of Iowa

### **Emeriti faculty**

Blank, Allan, Professor Emeritus  
B.A. Washington Square College of New York University  
M.A. University of Minnesota

Mirr, Edward A., Associate Professor Emeritus  
B.A. Queens College  
M.A. 1956 Columbia University Teacher's College

Robinson, J. Lawrence, Associate Professor Emeritus  
A.B. University of South Carolina  
M.M. University of Michigan

Smetana, Frantisek, Professor Emeritus  
Diploma Prague Conservatory of Music  
Diploma Ecole Normale de Musique

Wilson, Neil E., Professor Emeritus  
B.F.A. University of New Mexico  
M.M. University of New Mexico  
Ph.D. Indiana University

The Department of Music is committed to the advancement of western art music and jazz as academic disciplines, as fields of professional endeavor, and as a viable presence in the community. Entrance and graduation requirements comply with the National Association of Schools of Music guidelines. An audition and written general musicianship examination and interview are necessary for admission. Students also must meet the general admission requirements of the university. For audition information contact the Department of Music, P.O. Box 842004, 922 Park Ave., Virginia Commonwealth University, Richmond, VA 23284-2004.

All freshmen entering the department are classified as music foundation majors for their first year. Following completion of freshman-level theory and aural skills, and upon completion of specific performance achievement levels established by the various degree tracks, students may apply for admission into a specific bachelor of music degree track (performance, music education or composition) or the Bachelor of Arts in Music Program.

The bachelor of music degree is the initial professional degree in music. Its primary emphasis is on development of the skills, concepts and sensitivities essential to the professional life of the musician. At the center of the instructional program for the bachelor of music degree is the "core curriculum," comprising 30 credits of instruction in aspects of musicianship fundamental to all music degree programs. Included are courses in basic music theory, aural skills, music history, conducting, and advanced theoretical skills.

The Bachelor of Music/Music Education Program track incorporates requirements necessary to qualify for the state of Virginia's Collegiate Professional Certificate to teach music in the public schools. Reciprocity between Virginia and numerous other states makes it possible for those music education students who become certified to teach in Virginia to obtain certification in those other states.

The Bachelor of Arts in Music Program is designed for students who desire a program with a strong emphasis in music, combined with a strong liberal arts component, and a minor in an area other than music. Included are courses in basic theory, aural skills,

music history, applied music, as well as restricted and free music electives.

### Electives in music

Students majoring in a field other than music may register for ensembles, private or class lessons, and a variety of classroom courses in music. Classes in music appreciation, African-American music, introduction to writing music, basic music skills, and special offerings in music are specifically designed for the non-music major. Other courses are open to those who have adequate background.

### Minor in music

Any VCU student may declare a minor in music. The music minor comprises 22 credits distributed among the areas of music history/theory, ensemble performance, private lessons, and music electives. A music faculty adviser counsels every student about the selection of appropriate courses based on the student's competence and interest. Using the guidelines that follow, students have several options to meet their minor requirements:

- Music history and theory selected from MHIS 105, 110, 120, 135, 136, 220, 243, 250, 321, 322, 323, 324 for a total of nine credits.
- Large ensemble for four credits.
- Private lessons for four credits. One credit per semester; all credits to be earned on a single instrument. Students must earn Achievement Level I.
- Music electives for a total of five credits.

### Graduate study

The department offers graduate degrees in solo performance, composition, conducting and music education. See the Graduate Bulletin for courses and curricula.

### Fees

All students registering for private music lessons pay an applied music fee. This fee is additional to the comprehensive fee charged only to majors in the School of the Arts. The cost for private lessons for music majors is \$130 per semester for one credit and \$260 per semester for two or three credits. The private lesson fees for non-music majors are \$225 per semester for one-credit lessons

and \$450 per semester for two- and three-credit lessons.

### Community School of the Performing Arts

Pre-college, university and adult students may receive private or class instruction through the Community School of the Performing Arts, an adjunct to the Department of Music. Registration information and fee schedules can be obtained from Dr. Glenn Winters, coordinator of the Community School, at 828-2772. No degree credit is granted for either private or class lessons taken through the Community School.

### Degree requirements in music

Applied music achievement levels. Eight achievement levels have been established for applied instrumental and vocal study. These levels are explicit in terms of expected repertoire, musicianship/style, technique and sight-reading. "Honors" may be earned by students in any area who go beyond the eighth level. While freshmen normally earn Level I at their first semester juries, transfer students may be awarded a higher level based on their entrance auditions. The table below indicates the achievement levels required for graduation.

Bachelor of music	
Performance	VIII
(all areas except synthesizer and jazz)	
Synthesizer	VIII in principal area: III in secondary keyboard
Jazz	IV in classical studies VI in jazz
Music education	VI
Composition	VI in composition IV in performing medium
Bachelor of arts in music	
All areas	IV

Recital/convocation attendance. All undergraduate majors are required to pass four semesters of recital/convocation attendance for graduation. During each semester of enrollment, the student must attend a minimum number of concerts or recitals plus departmental convocations in order to earn credit.

Master class. This consists of participation in weekly master classes in the student's applied major area. For students in the Bachelor of Music

Program, eight semesters are required for performance and composition tracks; six semesters for the music education track. Students in the Bachelor of Arts in Music Program must complete four semesters of master class.

### Ensemble requirements

To ensure consistent skill development in ensemble settings, only one large ensemble credit per semester will be counted toward a student's large ensemble requirements. Students whose principal performing medium (major instrument) is a band or orchestral instrument or voice must satisfy the large ensemble requirement by performing in a large ensemble on that principal performing medium. An exception is made in the case of jazz studies majors whose principal instrument is saxophone. Jazz saxophone majors may elect to satisfy the large ensemble credit on another woodwind instrument. Bachelor of Music/Performance Program pianists must satisfy the ensemble electives by completing four of the six elective credits as pianists (i.e., by playing the piano in ensembles). Bachelor of Music/Performance Program organists must satisfy the large ensemble requirement through credit earned in a large choral ensemble. Bachelor of Music/Performance Program voice majors may elect to substitute opera theater for a large ensemble in the semester in which the senior recital is presented. Bachelor of arts in music students must earn six ensemble credits, which are not restricted with regard to large or small ensemble.

### Bachelor of music/performance

#### Brass, percussion, strings, woodwinds

Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APPM 173-174, 273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive courses	
Large Ensembles*	7(4) <sup>†</sup>
Ensemble electives	5(8) <sup>Δ</sup>
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Restricted music electives (selected from Aural Skills VI and any MHIS or MUSC 300- or 400-level course not otherwise required in the student's curriculum)	8



Pedagogy	2
Principal Performing Medium	24
Secondary Performing Medium <sup>†</sup>	3
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Survey of European History 101 or 102	3
Social science elective	3
Ethics	3
Mathematics/computer science/statistics elective	3
Laboratory science elective	4
Open electives	15
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* Only one large ensemble each semester may be used to fulfill large ensemble requirements.	
<sup>†</sup> Large ensemble requirements for guitar majors are four credits.	
<sup>Δ</sup> Ensemble electives for guitar majors are eight credits.	
<sup>‡</sup> Secondary performing medium requirements must be fulfilled with studies on a different instrument.	
<b>Organ</b>	
Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (advanced) (APPM 273-274, 373-374)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/convocation attendance (four semesters)	0
Supportive courses	
Large Ensembles (choral)*	6
Ensemble Electives	2
Accompanying	4
Pedagogy <sup>†</sup>	2
Lyric Diction	6
Counterpoint	3
Principal Performing Medium	24
Secondary Performing Medium <sup>†</sup>	4
Organ Literature and Design <sup>Δ</sup>	2
Service Playing <sup>Δ</sup>	2
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Survey of European History 101 or 102	3
Social science elective	3
Ethics	3
Mathematics/computer science/statistics	3
Laboratory science elective	4
Open electives	15
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* Only one large ensemble each semester may be used to fulfill large ensemble requirements.	
<sup>†</sup> Offered every other year.	
<sup>Δ</sup> Secondary performing medium requirements must be fulfilled with studies on a different instrument.	
<b>Synthesizer</b>	
Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APPM 173-174, 273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/convocation attendance (four semesters)	0

- \* Only one large ensemble each semester may be used to fulfill large ensemble requirements.
- <sup>†</sup> Secondary performing medium requirements must be fulfilled with studies on a different instrument.
- <sup>Δ</sup> Offered every other year.

**Piano**

Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (advanced) (APPM 273-274, 373-374)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/convocation attendance (four semesters)	0
Supportive courses	
Large Ensembles*	2
Ensemble electives (four as pianists)	6
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Restricted music electives (selected from Aural Skills VI and any MHIS or MUSC 300- or 400-level course not otherwise required in the student's curriculum.)	6
Accompanying	4
Pedagogy <sup>†</sup>	2
Principal Performing Medium	24
Secondary Performing Medium <sup>Δ</sup>	3
Piano Literature <sup>†</sup>	2
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Survey of European History 101 or 102	3
Social science elective	3
Ethics	3
Mathematics/computer science/statistics	3
Laboratory science elective	4
Open electives	15
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- \* Only one large ensemble each semester may be used to fulfill large ensemble requirements.
- <sup>†</sup> Offered every other year.
- <sup>Δ</sup> Secondary performing medium requirements must be fulfilled with studies on a different instrument.

**Supportive courses**

Large Ensembles*	5
Ensemble electives	7
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Performing Medium-Synthesizer	18
Performing Medium-Piano, Organ or Harpsichord	9
Computers in Music	3
MIDI Programming and Synthesis	3
Synthesizer and Composition	3
Master Class (at least two semesters in keyboard, six in synthesizer)	0
Junior Recital	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Survey of European History 101 or 102	3
Social science elective	3
Ethics	3
Mathematics/computer science/statistics	3
Laboratory science elective	4
Open electives	16
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- \* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

**Voice**

Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APPM 173-174, 273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/Convocation Attendance (four semesters)	0
Supportive courses	
Large Ensembles*	7 <sup>†</sup>
Ensemble electives	3
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Opera Theatre <sup>Δ</sup>	2
Pedagogy	2
Principal Performing Medium	24
Secondary Performing Medium <sup>†</sup>	3
Lyric Diction	6
Song Literature <sup>Δ</sup>	2
Master Class (eight semesters)	0
Junior Recital	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Foreign language 101-102	8
Social science elective	3
Ethics	3
Mathematics/computer science/statistics	3
Laboratory science elective	4
Open electives	10

- \* Only one large ensemble each semester may be used to fulfill large ensemble requirements.
- † In the semester of the senior recital, voice majors may substitute opera theatre for one large ensemble credit.
- Δ THEA 107 Introduction to Stage Performance or DANC 101 Modern Dance Technique I can be substituted with departmental approval.
- ‡ Secondary performing medium requirements must be fulfilled with studies on a different instrument.
- ◊ Offered every other year.

### Jazz Studies

Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APPM 173-174, 273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Supportive courses	
Large Ensembles*	4
Jazz Ensembles	9
Recital/convocation attendance (four semesters)	0
Performing Medium (eight credits classical, 16 credits jazz)	24
Jazz Improvisation	6
Jazz Arranging	12
Master Class (four semesters classical, four semesters jazz)	0
Junior Recital	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Survey of European History 101 or 102	3
Social science elective	3
Ethics	3
Mathematics/computer science/statistics	3
Laboratory science elective	4
Open electives	10
	124

- \* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

### Bachelor of music/composition

Music core curriculum	Credits
Integrated Theory	15
Aural Skills I-V	5
Keyboard Skills (APPM 173-174, 273-274)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Conducting	2
Recital/convocation attendance (four semesters)	0
Supportive courses	
Class Composition	2
Performing Medium	12
Private Composition	13

Counterpoint	3
MIDI Programming and Synthesis	3
Orchestration	3
Form and Analysis	2
Advanced Keyboard Skills (APPM 373-374)	2
Large Ensembles *	5
Ensemble electives	7
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1
Master Class (eight semesters: four in performing medium, four in composition)	0
Senior Recital	0
General studies	
English 101, 200 Composition and Rhetoric I, II	6
Survey of European History 101 or 102	3
Social science elective	3
Ethics	3
Mathematics/computer science/statistics	3
Laboratory science	4
Open electives	12
	124

- \* Only one large ensemble each semester may be used to fulfill large ensemble requirements.

### Bachelor of music/music education

Music core curriculum	Credits		
Integrated Theory	15		
Aural Skills I-V	5		
Keyboard Skills (APPM 173-174, 273-274)	4		
Introduction to Musical Styles	2		
Introduction to World Music	1		
Music History	8		
Conducting	2		
Recital/convocation (four semesters)	0		
		Instrumental	Vocal/Choral
		Track Major	Track Major
		Credits	Credits
Supportive courses			
Conducting Laboratory Ensembles	1	1	
Lyric Diction*	0	3	
Class Instruments (APPM 181, 183, 184, 185, 187, 193 <sup>†</sup> , 195)	7	6	
Principal Performing Medium	18	18	
Secondary Performing Medium <sup>Δ</sup>	3	3	
Large Ensembles <sup>†</sup>	7	7	
Small Ensemble electives <sup>†</sup>	2	0	
Jazz Laboratory or Small Jazz Ensemble or Jazz Private Lessons	1	1	
Junior Recital	0	0	
Master Class (six semesters)	0	0	
General studies			
English 101, 200 Composition and Rhetoric I, II and a literature	9	9	
Mathematics	3	3	
Mathematics or science elective	3	3	
Survey of American History (HIS 103 or 104)	3	3	

Social science electives	6	6
Physical education (or dance)	1	1
Mathematics/computer science/statistics elective or computers in music	3	3
Laboratory science elective or acoustics	3	3
Professional courses		
Education 301 Human Development and Learning	3	3
Music in General Education	2	2
Processes of Music Education	3	3
Observation in Music Education	1	1
Conducting and Rehearsal Techniques	3	3
Student Teaching	12	12
	131	131

- \* Required of vocal/choral majors only (vocalists, keyboardists who plan to become certified in vocal/choral music).
- † Required of instrumental majors – certification track only.
- Δ Must be on the same instrument (For vocal/choral majors: Voice for keyboardists; keyboard for vocalists).
- ‡ Only one large ensemble each semester may be used to fulfill the large ensemble requirement. Large ensemble must be related to student's area, e.g., vocal/choral majors select choral ensembles, instrumental majors select instrumental ensembles.

### Bachelor of arts in music

Core curriculum	Credits
Integrated Theory (MHIS 135-236)	12
Aural Skills (APPM 165-266)	4
Introduction to Musical Styles	2
Introduction to World Music	1
Music History	8
Principal Performing Medium*	12
Ensembles	6
Recital/convocation (four semesters)	0
Master Class (four semesters)	0
Keyboard Skills	2
Music electives (selected from: MHIS and MUSC 300-400; APPM 381)	6
General studies	
English 101, 200 Composition and Rhetoric I, II and Literature)	12
Foreign language <sup>†</sup>	14
Laboratory science/natural science	7
Ethics	3
Mathematical and computer science <sup>Δ</sup> (at least one course in each area)	6
Survey of European History (HIST 101 or 102)	3
Social science elective	3
Minor or secondary concentration <sup>‡</sup>	18
Open electives	5
	124

- \* Achievement level IV required.
- † Four semesters of one language or two semesters and Lyric Diction APPM 161-162 Lyric Diction.

<sup>Δ</sup> Includes computer related courses listed under business (BUS 160-161, 162-163, 164-165, 166-167, 168).

<sup>†</sup> Selected from one of the established minor programs in the university or planned as a coherent series of studies. An advisory committee for each B.A. student will approve the secondary concentration course sequence.

## Courses in applied music (APPM)

### APPM 161-162 Lyric Diction.

Continuous course; 3 lecture hours. 3-3 credits. A study of English, Italian, ecclesiastical Latin, French, and German stage diction with practical experience in singing and phonetic transcription using the International Phonetic Alphabet.

### APPM 165-166, 265-266, 365-366 Aural Skills I-VI.

Continuous course; 2 laboratory hours. 1-1 credit. Open to non-music majors by permission of department chair. Development of skills in melodic and rhythmic dictation, harmonic identification, and sight-singing. Emphasis throughout is placed on current uses of technology within the discipline. Designed as companion courses to MHIS 135-335.

### APPM 173-174, 273-274 Keyboard Skills.

Continuous course; 2 laboratory hours. 1-1 credit. Open only to music majors. Acquisition of keyboard performance skills with emphasis on reading, keyboard harmony, and improvisation.

### APPM 181-182 Class Lessons in Strings.

Continuous course; 2 laboratory hours. 1-1 credit. Designed for music education majors. Achievement of performance competencies and teaching knowledge on violin, viola, cello, or string bass. Acquisition of basic techniques on two additional string instruments.

### APPM 183-184 Class Lessons in Woodwinds.

Continuous course; 2 laboratory hours. 1-1 credit. Designed for music education majors. Achievement of performance competencies and teaching knowledge on flute, clarinet, oboe, bassoon, and saxophone.

### APPM 185-186 Class Lessons in Brass.

Continuous course; 2 laboratory hours. 1-1 credit. Designed for music education majors. Achievement of performance competencies and teaching knowledge on trumpet, baritone, tuba, trombone, or French horn. Acquisition of basic techniques on two additional brass instruments.

### APPM 187-188 Class Lessons in Percussion.

Continuous course; 2 laboratory hours. 1-1 credit. Designed for music education majors. Achievement of performance competencies and teaching knowledge on snare drum. Acquisition of basic techniques on xylophone or timpani.

### APPM 191-192 Class Lessons in Piano.

Continuous course; 2 laboratory hours. 1-1 credit. No prior knowledge of music required. Not open to music majors. Achievement of performance competencies at the keyboard with emphasis on finger dexterity and reading.

### APPM 193-194 Class Lessons in Voice.

Continuous course; 2 laboratory hours. 1-1 credit. Achievement of performance competencies in voice including vocal production, diction, solo, and group performance.

### APPM 195-196 Class Lessons in Guitar.

Continuous course; 2 laboratory hours. 1-1 credit. Acquisition of performance competencies in guitar including chording, single-string technique, plectrum, and finger styles.

### APPM 197-198 Class Lessons in Organ.

Continuous course; 2 laboratory hours. 1-1 credit. Prerequisite: Permission of instructor. Achievement of performance competencies in organ including pedal technique, coordination of hands and feet, and registration.

### APPM 199 Recital/Convocation Attendance.

Semester course; no credit. Course may be repeated without limit. Music majors only. Attendance at weekly departmental convocations and ten additional concerts or recitals each term.

### APPM 251 Jazz Improvisation I.

Semester course; 3 lecture hours. 3 credits. A study of basic compositional techniques that can be used in creating a musically effective improvised solo in the jazz medium.

### APPM 252 Jazz Improvisation II.

Semester course; 3 lecture hours. 3 credits. Prerequisite: APPM 251 or permission of instructor. Advanced melodic, harmonic, and rhythmic improvisational techniques as applied to contemporary jazz compositions.

### APPM 271 Sight Reading.

Semester course; 1 lecture hour. 1 credit. A practical course for singers and instrumentalists designed to develop facility in sight reading.

### APPM 282 Conducting Lab Ensembles.

Semester course; 1 laboratory hour. 5 credits. May be repeated once for credit. Offered only in the spring semester. Reading and conducting experience with a band, chorus, or orchestra. Literature emphasized will be appropriate for elementary through secondary school groups.

### APPM 299 Master Class.

Semester course; no credit. Course may be repeated without limit. Participation in weekly master classes in student's applied major area.

### APPM 300-Level Private Instruction: Principal and Secondary Performing Mediums.

Semester courses; one half-hour or 1 hour private lesson per week. 1 to 3 credits. One hour practice daily for each credit. Repeatable without limitations. Extra fee required. In order to register for any private lesson, non-music majors must obtain correct course number in either Room 132, Performing Arts Center, or at the music table in the University Student Commons during registration; music majors need to consult their advisers. Lessons are available in the following areas: bassoon, carillon (1 credit only), cello, clarinet, composition (by permission of instructor), double bass, drum set (undergraduate, 1 credit only),

euphonium, flute, French horn, guitar, harp, harpsichord, oboe, organ, percussion, piano, saxophone, synthesizer, trombone, trumpet, tuba, viola, violin, and voice.

### APPM 351 Jazz Improvisation III.

Semester course; 3 lecture hours. 3 credits. Prerequisite: APPM 252 or permission of instructor. Techniques of thematic improvisation, stating a melody, and improvising on contemporary jazz compositions. Availability contingent upon student demand and faculty resources.

### APPM 352 Jazz Improvisation IV.

Semester course; 3 lecture hours. 3 credits. Prerequisite: APPM 351 or permission of instructor. Special emphasis on non-tonal and pan-tonal improvisation. Availability contingent upon student demand and faculty resources.

### APPM 362 Service Playing.

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Offered alternate years. The development of skills necessary for church service playing: transcription of piano and orchestral scores; accompanying and hymn playing; conducting from the console; the accompaniment of chant.

### APPM 370 Large Ensembles.

Semester course; 3 laboratory hours. 1 credit. Each section may be repeated up to eight times for credit. An audition is prerequisite for sections 1, 3, and 4. Sections: (1) orchestra, (2) University Band, (3) symphonic wind ensemble, 4) Commonwealth Singers, (5) Choral Arts Society.

### APPM 373-374 Advanced Keyboard Skills.

Continuous course; 2 laboratory hours. 1-1 credit. Prerequisite: APPM 274 or permission of instructor. Emphasis is on harmonization with correct style and voice-leading, reading figured bass and lead sheets, improvisation, and reducing scores at the keyboard.

### APPM 375-376 Score Reading.

Continuous course; 2 laboratory hours. 1-1 credit. Prerequisite: APPM 274 or equivalent. Acquisition of skill in reducing scores at the keyboard, beginning with simple three-part works and progressing to full instrumentation.

### APPM 380 Jazz Laboratory.

Semester course; 2 laboratory hours. 1 credit. Prerequisite: MHIS 236. Development of the basic improvisational skills and examination of performance practice in the jazz idiom.

### APPM 381-382 Conducting.

Continuous course; 1 lecture and 2 laboratory hours. 2-2 credits. Prerequisites: APPM 266 and MHIS 236. Open to music major. Development of fundamental gestural skills for conducting instrumental and choral ensembles including simple and compound meters, multimeter music, and aleatoric music. Emphasizes score reading, aural analysis skills, and terminology.

### APPM 383, 384 Musical Theater.

Semester courses; 4 laboratory hours. 2, 2 credits. Each course may be repeated for credit three times. Prerequisite: APPM 193 or equivalent. An exploration of the fundamentals of musical theater including production, staging and performing.

**APPM 385 Opera Theater.**

Semester course; 1 lecture and 4 studio hours. 2 credits. May be repeated up to four times for credit. Prerequisite: Permission of instructor required. Explores aspects of opera through study, written research, and fully-staged public performances of operatic scenes and/or one-act operas.

**APPM 390 Small Ensembles.**

Semester course; 2 or 3 laboratory hours. 0.5 or 1 credit. Each section may be repeated up to eight times for credit. Auditions required for all sections. Sections: (1) ensemble for new music, (2) the madrigalists, (3) collegium musicum, (4) women's chorus, (5) vocal ensembles, (6) piano ensembles, (7) accompanying, (8) percussion ensemble, (9) percussion lab ensemble, (10) woodwind ensembles, (11) brass ensembles, (12) chamber orchestra, (13) string ensembles, (14) guitar ensembles, (15) small jazz ensembles, (16) jazz orchestra I, (17) jazz orchestra II, (18) jazz orchestra III, (19) basketball pep band.

**APPM 393 Junior Project.**

No credit. Individual research project in the student's major field under the supervision of faculty.

**APPM 394 Junior Recital.**

No credit. Public presentation of a half-length recital.

**APPM 463-464,563-564 Pedagogy.**

Continuous course; 2 lecture hours. 2-2 credits. A study of the musical, physiological, and psychological aspects of teaching instruments or voice. Second semester will include practical experience in teaching students under faculty supervision. Sections: (1) piano, (2) voice, (3) organ, (4) percussion,

**APPM 485 Percussion Laboratory/Seminar.**

Semester course; 2 laboratory hours. 1 credit class. May be repeated up to four times for credit. Advanced course in specialized percussion techniques and literature designed for the performer, composer, and educator. Topics may include surveys of literature, notational problems, mallet making, and instrumental maintenance. Topics will vary from semester to semester depending on the needs and interests of the class.

**APPM 493 Senior Project.**

No credit. Individual research project in the student's major field under the supervision of faculty.

**APPM 494 Senior Recital.**

No credit. Public presentation of a full-length recital.

**Upper-division undergraduate students may enroll for selected 500-level graduate courses with permission of the department chair and instructor. See the Graduate Bulletin for course descriptions.**

## Courses in music history, literature and theory (MHIS)

**MHIS 100/200 Special Offerings in Music.**

Flexible term course; variable; 1-3 credits. Course may be

repeated. Semester or short-term course designed for non-music majors which deals with a variety of subjects in music. Subject matter will change from term to term and may involve lecture and/or laboratory. See the Schedule of Classes for specific offerings each semester.

**MHIS 105-106 Introduction to Writing Music.**

Continuous course; 3 lecture hours. 3-3 credits. For non-music majors only. Creating and harmonizing melodies, principles of notation, and elementary music theory. Second semester emphasis is on creative aspects.

**MHIS 110 Elements of Music.**

Semester course; 3 lecture hours. 3 credits. No degree credit for music majors. A study of music notation, scale, and triad forms. Aural skill development will parallel the theoretical studies. Intended to prepare music majors for core curriculum study.

**MHIS 117 Computers in Music.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Study and application of music software on mainframe and personal computers. The student will be expected to demonstrate competence in the high-level languages, PASCAL and BASIC. Projects will focus on programming for educators and composers.

**MHIS 120 Introduction to Musical Styles.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. A study of the major styles and forms of western music with emphasis on the development of active cognitive listening skills through guided listening to selected recorded music.

**MHIS 135-136/235-236/335 Integrated Theory I-V.**

Continuous course; 3 lecture hours. 3-3 credits. Open to non-music majors by permission of department chair. The first year is a study of diatonic harmony with emphasis on melodic structure, harmonization and analysis. The second year continues with the study of chromatic harmony, modulation, and an introduction to jazz theory and practice. The fifth semester is an introduction to twentieth-century harmony, melody and rhythm. Emphasis throughout is placed on current uses of technology within the discipline.

**MHIS 201 Acoustics.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Recommended prerequisite: MATH 101. Physical properties of sound and wave mechanics applied to the study and analysis of music and musical instruments. Topics will include instrumental and vocal sound production and perception, timbral characteristics, and pitch theory.

**MHIS 220 Introduction to World Music.**

Semester course; 1 lecture hour. 1 credit. Prerequisite: MHIS 120. Study of various non-European musical cultures and musical practices in terms of larger cultural and sociological issues beyond western traditions.

**MHIS 243 Music Appreciation.**

Semester course; 3 lecture hours. 3 credits. Not open to music majors. Designed to encourage understanding of music from selected periods. Development of active

cognitive listening skills through guided listening to selected recorded music.

**MHIS 250/AFAM 250 Introduction to African-American Music.**

Semester courses; 3 lecture hours. 3 credits. An introductory survey of black involvement with the development of music in America from 1607 to the present. African-American musical styles will be studied from many aspects, including their African roots and contemporary popular expression. Performance practices will be analyzed and active cognitive listening skills developed through guided listening to selected recordings.

**MHIS 280 Survey of 20th Century American Popular Music.**

Semester course; 3 lecture hours. 3 credits. A stylistic and historical survey of representative styles and trends of American popular music, from the turn of the century to the present. Performance practices will be analyzed through selected recordings and live performances.

**MHIS 302 Late Romantic Harmony.**

Semester course; 3 lecture hours. 3 credits. A review of common practice harmony and a study of chromatic harmony in the 19th and 20th centuries.

**MHIS 303, 304 Piano Literature.**

Semester courses; 2 lecture hours. 2, 2 credits. A survey of stringed keyboard literature. Historical, formal, and stylistic considerations of the various periods and composers of keyboard music. Listening and reading assignments included.

**MHIS 306 Form and Analysis.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 335 or permission of instructor. An analytical study of musical forms and salient features of melody, harmony, rhythm, and timbre of late baroque, classical, romantic and 20th century compositions.

**MHIS 311 Jazz Arranging I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 236 or permission of instructor. A study of the basic harmonic, melodic, notational, and orchestrational techniques needed to draft a successful jazz arrangement. The final project will be to write an arrangement for a 12-piece jazz ensemble.

**MHIS 312 Jazz Arranging II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MUSC 311 or permission of instructor. Advanced harmonic, melodic, and orchestrational techniques applied to writing for the small jazz ensemble, vocal group, and large jazz orchestra.

**MHIS 320 Music in Films.**

Semester course; 3 lecture hours. 3 credits. Significant film music from the 1930s to the present. The course will focus on techniques for listening and evaluation. Functional, social, technical, and aesthetic considerations of film music will be examined. Students will prepare a critical analysis of each of the films viewed in class based on their perceptions as listeners/viewers. Music reading ability not required.

**MHIS 321, 322, 323, 324 Music History I-IV.**

Semester courses; 2 lecture hours. 2, 2 credits. Prerequisite: MHIS 120 or MHIS 243. Study of Western music in a historical context from antiquity to the present, including jazz history. Semester courses divided into the following: antiquity to baroque era, classical to romantic, 20th century, jazz history. MHIS 322 and 323 are writing intensive.

**MHIS 336 Organ Literature and Design.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MHIS 201 or permission of instructor. A survey of organ music with correlating studies in the design and construction of pipe organs from 1500 to the present.

**MHIS 350/AFAM 350 Studies in the Music of the African Continent and Diaspora.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of six credits. Prerequisite: MHIS 243, MHIS/AFAM 250 or permission of instructor. An in-depth examination of selected topics and issues in African-derived musical and cultural traditions. See the Schedule of Classes for specific offerings.

**MHIS 380 Survey of the Music Industry.**

Semester course; 3 lecture hours. 3 credits. Commercial aspects of the music industry. Topics include copyright, music production and technology, management, radio and television, live venues and recording.

**MHIS 392 and 492 Independent Study.**

Semester courses; variable; 1-6 credits per semester. Maximum total of six credits. Determination of the amount of credit and permission of the instructor and department chair must be obtained prior to registration for the course. Open generally only to students of junior and senior standing who have individual interests in areas not otherwise available to the student.

**MHIS 401 Seminar in Music History.**

Semester course; 2 lecture hours. 2 credits. May be repeated for a maximum of six credits. Research and discussion of selected topics, in music history and literature.

**MHIS 407 Arranging Modern Popular Music.**

Semester course; 3 lecture hours. 3 credits. Adapting and scoring music for ensembles incorporating popular commercial performance styles.

**MHIS 411 Jazz Arranging III.**

Semester course; 3 lecture hours. 3 credits. Availability contingent upon student demand and faculty resources. Techniques of arranging for the contemporary pop medium.

**MHIS 412 Jazz Arranging IV.**

Semester course; 3 lecture hours. 3 credits. A study of the techniques used in modal, blues, and other forms of contemporary jazz composition. Availability contingent upon student demand and faculty resources.

**MHIS 413 Arranging.**

Semester course; 3 lecture hours. 3 credits. Practical, technical, and conceptual considerations of arranging and transcribing for vocal and instrumental groups will be explored.

Students will demonstrate competence in these creative areas to the optimum level of school and/or church music organization.

**MHIS 431/RELS 431 Hymnology.**

Semester course; 3 lecture hours. 3 credits. Offered alternate years. A study of hymns and hymn tunes with emphasis on their development, style, and functions.

**MHIS 434 Choral Literature.**

Semester course; 2 lecture hours. 2 credits. A survey of part-music for mature voices including both sacred and secular works. Primary emphasis will be on mixed-voice repertoire.

**MHIS 435/RELS 435 Liturgics.**

Semester course; 3 lecture hours. 3 credits. Offered alternate years. A study of the forms of public worship emphasizing the orders in current usage. The planning of weekly and special services.

**MHIS 441 American Music.**

Semester course; 2 lecture hours. 2 credits. The growth and development of music in the United States from 1607 to the present. While the chief concentration will be upon art music and church music, folk music, jazz and the other forms of popular expression will be included.

**MHIS 442 20th Century Music.**

Semester course; 2 lecture hours. 2 credits. Impressionistic, expressionistic, neoclassic, and neoromantic influences and styles of music. Development of new sound-generating techniques and methods for ordering the new tonal materials.

**MHIS 450 Performance Practice.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Course may be repeated up to four times. A study of performance practices including ornamentation, instrumentation, and stylistic considerations. Topics and emphases will change from semester to semester.

**MHIS 451, 452 Orchestral Repertoire.**

Semester courses; 1 lecture hour or 1 lecture and 2 laboratory hours. 1 credit or 2 credits. Performance and study of selected major symphonic historical, analytical, and stylistic perspective. Research reports will include comparisons of interpretations. Repertoire will consist of basic audition pieces selected by orchestras. Laboratory sessions will utilize available instrumentation for performance.

**MHIS 465, 466 Song Literature.**

Semester courses; 2 lecture hours. 2, 2 credits. A survey of the vocal literature of Germany, France, England, and other countries. Students will perform material.

**MHIS 491 Topics in Music.**

Semester course; variable; 1-3 credits per semester. May be repeated for a maximum of nine credits. Flexible term courses in selected aspects of music performance, theory, literature, or history. See the Schedule of Classes for specific topics to be offered each semester.

**Courses in music composition (MUSC)****MUSC 111 MIDI Programming and Synthesis.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of MIDI (Musical Instrument Digital Interface) programming techniques as applied to synthesis and composition on electronic musical instruments.

**MUSC 112 Synthesizer and Composition.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Prerequisite: MUSC 111 or permission of instructor. An in-depth use of the MIDI (Musical Instrument Digital Interface) synthesizer as an instrument for performance and composition. Projects will involve utilization of the computer in conjunction with synthesizers.

**MUSC 201 Class Composition I.**

Semester course; 2 lecture hours. 2 credits. Prerequisites: APPM 166, MHIS 136, and permission of instructor. Open to all music majors and required of potential composition majors; the emphasis of this class will be on simple rhythmic and melodic studies.

**MUSC 202 Class Composition II.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: MUSC 201 or permission of instructor. An extension of Class Composition I and an introduction to two-part vocal and instrumental writing, improvisational studies, and modal and synthetic scales. The emphasis throughout will be on original composition. Availability contingent upon student demand and faculty resources.

**MUSC 311 Introduction to Digital Synthesis.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MUSC 112, MHIS 117, and CARD 331 or permission of instructor. Availability contingent upon student demand and faculty resources. A study and application of digital sampling and sound modification for the production of multitrack recordings.

**MUSC 312 Digital Synthesis.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MUSC 311 or permission of instructor. Availability contingent upon student demand and faculty resources. A study and application of digital synthesis and advanced techniques in sound modification through computer control.

**MUSC 315 Counterpoint I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 236. This class concentrates on two-part writing, canons, species, exercises, short two-voiced pieces, and inventions.

**MUSC 316 Counterpoint II.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MHIS 236. Availability contingent upon student demand and faculty resources. Three- and four-part writing forms based on the chorale; contrapuntal variation forms, and fugue will be studied.

**MUSC 405 20th-Century Techniques.**

Semester course; 3 lecture hours. 3 credits. No degree credit for graduate composition majors. Prerequisite: MHIS 236 or permission of instructor. Composition in and analysis of techniques associated with late Romanticism, Impressionism, Neo-Classicism, Expressionism, Serialism, and current avant-garde music.

**MUSC 406 Orchestration.**

Semester course; 3 lecture hours. 3 credits. No degree credit for graduate composition majors. Prerequisite: MHIS 236. Application of idiomatic scoring devices for orchestral instruments and voices in both large and small combinations.

**MUSC 425, 426 Projects in Electronic Music.**

Semester courses; 4-12 laboratory hours. 2-6 credits. Each course may be repeated for a maximum of 12 credits. Prerequisite: Permission of instructor. Completion of selected projects in electronic module design and/or electronic music composition.

**MUSC 450 Composition Seminar.**

Semester course; 1 lecture hour. 1 credit. May be repeated for a maximum of four credits. A forum for performance, discussion, and critical evaluation of student compositions.

## Courses in music education (MUED)

**MUED 281 Basic Music Skills.**

Semester course; 3 lecture hours. 3 credits. Not open to music majors. Development of basic creative and performance competencies for instructional purposes and the integration of music with other subject areas.

**MUED 290 Music in General Education.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. The role of music in general educational curricula with emphasis on trends in music education, philosophy, learning theories as they apply to music, concepts of curriculum and music in the educational environment. Laboratory hours will involve observations of selected school environments.

**MUED 331 Multiple Choir Program.**

Semester course; 3 lecture hours. 3 credits. Offered alternate years. The organization of multi-choir programs in the church; children's choir methods and materials; handbell choirs.

**MUED 383 Observation in Music Education.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: MUED 290. Observations and field experiences in public/private schools and in class discussion and analysis of observed techniques and procedures.

**MUED 391 Processes of Music Education.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MUED 290. Study of current methods and materials of music in education. Orff, Dalcroze, Kodaly, Manhattanville, and other modern music education systems will be discussed, observed, and demonstrated.

**MUED 392 Conducting and Rehearsal Techniques.**

Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. Prerequisite: APPM 381 and MUED 290 or permission of instructor. Development of enhanced conducting and rehearsal skills for school instrumental or choral groups. Emphasis on developing conducting technique, pacing, selecting and arranging appropriate materials and age appropriate musical goals.

**MUED 479 Music Instrument Repair.**

Semester course; 2 laboratory hours. 1 credit. A study of problems related to intonation and tone quality in band and orchestra instruments; the relationship of mouthpieces and reeds to intonation; emphasis on acquiring knowledge and skill in the care and repair of music instruments.

**MUED 483 Special Workshop in Music Education.**

Semester course; 0.5-3 credits. Flexible term courses on selected aspects of music education. See the Schedule of Classes for specific offerings each term.

**Upper-division undergraduate students may enroll with permission in MUED 595 and MUED 597. See the Graduate Bulletin for course descriptions.**

## Department of Painting and Printmaking

**Richard Roth**

Professor and Chair (1999)  
B.F.A. The Cooper Union for the Advancement of Science and Art  
M.F.A. 1977 Tyler School of Art of Temple University

Bolduan, Ruth (1988) Associate Professor

B.A. 1969 American University  
M.F.A. 1980 American University

DeSmidt, Thomas H. (1971) Professor and Associate Dean

A.A. Lincoln College  
B.F.A. Layton School of Art  
M.F.A. 1970 Syracuse University

Donato, Gerald M. (1967) Professor

B.S. Northern Illinois University  
M.A. Northern Illinois University  
M.F.A. 1967 University of Wisconsin

Drought, Michael H. (1975) Associate Professor and Associate Dean

B.S. University of Wisconsin, Madison  
M.F.A. 1973 University of Wisconsin, Madison

Freed, David C. (1966) Professor

B.F.A. Miami University, Ohio  
M.F.A. 1962 University of Iowa

Gower, Ann Renee (1981) Associate Professor

B.S. University of Wisconsin  
M.A. 1978 University of Minnesota  
M.F.A. 1981 Syracuse University

Miller, James B. (1971) Professor

Dip.A.D. Leeds College of Art  
M.F.A. 1971 University of Arkansas

Tapia, Javier (1988) Associate Professor

B.F.A. University of Texas, Austin  
M.F.A. 1987 University of Texas, Austin

Tisserat, Barbara C. (1978) Associate Professor

B.F.A. Colorado State University  
M.F.A. 1977 University of Wisconsin, Madison

Wetton, Philip S. (1969) Professor

Dip.A.D. Coventry College of Art  
M.F.A. 1967 Brighton College of Art

Yarowsky, Morris (1969) Professor

A.B. Dartmouth College  
M.F.A. 1962 California College of Arts and Crafts

**Emeriti faculty**

Bumgardner, James A., Professor Emeritus

B.F.A. Virginia Commonwealth University

Campbell, B. Jewett, Professor Emerita

New York Art Students' League (three years)  
Skowhegan School of Painting and Sculpture (two summers)  
Hans Hoffman School of Art (two summers)

Kevorkian, Richard E., Professor Emeritus

B.F.A. Virginia Commonwealth University  
Summer Session Pennsylvania Academy of Arts and Crafts

Martin, Bernard M., Professor Emeritus

B.F.A. Virginia Commonwealth University  
M.A. Hunter College

Pollak, Theresa

B.S. University of Richmond  
Hans Hoffman School of Painting  
Art Students' League of New York

Russell, Milo F., Professor Emeritus

B.F.A. Virginia Commonwealth University  
M.A. University of Virginia

Faculty and students in the Department of Painting and Printmaking work together in a professional and creative learning environment. The curriculum enables students to adopt a specialized focus within the discipline and use elective options to pursue other areas of interest in the School of the Arts, the university and the community. It also permits students to tailor a course of study suited to their professional and personal ambitions. The undergraduate program provides students opportunities for concentrated experiences in both practice and theory as a foundation for independent exploration and artistic development. Classroom discussions invite students to examine a range of contemporary critical issues which enables them to understand their own studio work as part of the historical continuum. As students develop their skills in critical analysis they are challenged to articulate and justify their ideas both visually and verbally.

The size and diversity of the faculty guarantees exposure to a plurality of ideas and stylistic approaches. In

addition, the department's visiting artist program brings to campus leading figures in the world of contemporary art for discussions of their work, critiques of student work, and workshops.

### Degree requirements in painting and printmaking

	Credits
Studios	
Foundation program	16
Sculpture or crafts	4
Sculpture	4
Painting	16
Drawing	12
Printmaking	12
Senior seminar	2
General studies	
English 101, 200	6
Literature	6
Introduction to the arts	1
Art history	17
Approved electives to include three credits in the social/behavioral sciences and three credits in the natural sciences/mathematics*	13
Open electives	11
Painting and printmaking electives	10
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\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

### Minor in painting and printmaking

Successful completion of the Art Foundation Program is a prerequisite for the minor which consists of at least 18 credits in painting and printmaking courses. Of these 18, at least nine credits must be in upper-level courses.

### Courses in painting and printmaking (PAPR)

#### PAPR 155, 156 Drawing and Painting, Basic.

Semester courses; 3 studio hours. 1, 1 credit. Introduction to painting with emphasis on learning basic techniques. Discussion of materials and their use. Models, both nude and clothed, are used.

#### PAPR 203, 204 Painting and Design, Basic.

Semester courses; 9 studio hours. 3, 3 credits. Offered only in summer school. Painting and structure are discussed in terms of space, form, and content. Work may be carried on out-of-doors or indoors.

#### PAPR 205 Painting, Basic.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. An introduction to the use of paints with an emphasis on the organization of the artistic image, through the use of plastic form and color, coupled with analysis of historical and contemporary work.

#### PAPR 207 Painting Techniques.

Semester course; 2 lecture and 6 studio hours. 4 credits. An investigation of pigments, glazes, underpainting, mixed media, materials, and other studio techniques.

#### PAPR 209 Materials: Printmaking.

Semester course; 2 lecture and 6 studio hours. 4 credits. An introduction to three principal printmaking techniques: etching, lithography, and screenprinting.

#### PAPR 214 Printmaking, Basic.

Semester course; 1 lecture and 6 studio hours. 3 credits. Offered only in summer school. Fundamentals of printmaking. Introduction of basic problems of techniques and composition.

#### PAPR 221 Drawing, Basic.

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of six credits. Drawing instruction with attention to extension of the student's knowledge of the tools of drawing. Materials and techniques will be related to pictorial organization.

#### PAPR 223, 224 Drawing, Basic.

Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Offered only in summer school. Course introducing drawing fundamentals and spatial relationships. Concern is given to materials and the development of the students' visual perceptions.

#### PAPR 255-256 Drawing and Painting, Basic.

Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Development of basic skills; exploring structure, color, form, and image. Students will be exposed to class critiques as a means of analyzing their creative works.

#### PAPR 303, 304 Painting, Intermediate.

Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Offered only in summer school. Prerequisite: Three credits of basic painting or permission of instructor. Primary emphasis on the development of an individual direction in the context of contemporary ideas and images in painting.

#### PAPR 305 Painting, Intermediate.

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: Four credits of basic painting or permission of instructor. Primary emphasis on the development of an individual direction in the context of contemporary ideas and images in painting.

#### PAPR 312 Printmaking, Intermediate (Lithography).

Semester course; 9 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of basic printmaking or permission of instructor. Investigation of techniques and technical printing problems. Stones and plates are used.

#### PAPR 313 Printmaking, Intermediate (Etching).

Semester course; 9 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of basic printmaking or permission of instructor. Techniques and technical problems in the printmaking area are investigated.

#### PAPR 314 Printmaking, Intermediate (Screenprinting).

Semester course; 1 lecture and 6 studio hours. 3 credits. Offered only in summer school. Prerequisite: Basic or beginning printmaking. Investigation of techniques and technical problems in the printmaking area.

#### PAPR 315 Printmaking, Intermediate (Etching).

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAPR 209 or permission of instructor. Investigation of etching printmaking, drypoint, engraving, aquatint, soft grounds, and related techniques.

#### PAPR 317 Printmaking, Intermediate (Lithography).

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAPR 209 or permission of instructor. Investigation of techniques and technical printing problems in lithographic printing process from stones and plates.

#### PAPR 319 Printmaking, Intermediate (Screenprinting).

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: PAPR 209 or permission of instructor. An investigation of cut, hand-drawn, and photographic stencil techniques and printing on a variety of surfaces.

#### PAPR 321 Drawing, Intermediate.

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of six credits. Prerequisite: Three credits of basic drawing or permission of instructor. Drawing for advanced students with special emphasis on creative response to the drawing as a work of art.

#### PAPR 324 Drawing, Intermediate.

Semester course; 9 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of basic drawing or permission of instructor. Drawing for intermediate students with emphasis on problematic thinking and dealing with drawing as an aesthetic form.

#### PAPR 326 Color.

Semester course; 3 lecture hours. 3 credits. A course examining the concepts governing the use of color. Historical and contemporary concepts and methods of application will be explored.

#### PAPR 329 Life Drawing.

Semester course; 6 studio hours. 3 credits. May be repeated for a maximum of nine credits. Prerequisite: Foundation drawing. Explores the structural and muscular systems of the human body with emphasis upon proportional relationships, chiaroscuro, contour, volume, and foreshortening.

#### PAPR 355, 356 Drawing and Painting, Intermediate.

Semester course; 9 studio hours. 3, 3 credits. Prerequisite: Three credits of basic drawing or painting or permission of

instructor. Intermediate instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

#### **PAPR 403, 404 Painting, Advanced.**

Semester courses; 1 lecture and 6 studio hours. 3, 3 credits. Offered only in summer school. Prerequisite: Three credits of intermediate painting or permission of instructor. More ambitious projects with the aim of developing in the senior student a highly professional approach and achievement in his/her work. Individual as well as group discussions.

#### **PAPR 405 Painting, Advanced.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisite: Four credits of intermediate painting or permission of instructor. More ambitious projects with the aim of developing in senior students a highly professional approach and achievement in their work. Individual as well as group discussions.

#### **PAPR 412 Printmaking, Advanced (Lithography).**

Semester course; 9 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Specialization in one medium. Aesthetic suitability of the design to a particular medium is emphasized.

#### **PAPR 413 Printmaking, Advanced (Etching).**

Semester course; 9 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Concentration on one medium with emphasis on creative techniques.

#### **PAPR 414 Printmaking, Advanced (Screenprinting).**

Semester course; 1 lecture and 6 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Cut, hand-drawn, and photographic stencil techniques are explored. Printing will be done on a variety of surfaces.

#### **PAPR 415 Printmaking, Advanced (Etching).**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisite: Four credits of intermediate printmaking or permission of instructor. Specialization in one medium with emphasis upon technical research and aesthetic suitability of the design to the particular medium used.

#### **PAPR 417 Printmaking, Advanced (Lithography).**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisite: Four credits of intermediate printmaking or permission of instructor. Further investigation of techniques and technical printing problems in the lithographic printing process from stones and plates.

#### **PAPR 419 Printmaking, Advanced (Screenprinting).**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of 20 credits. Prerequisite: Four credits of intermediate printmaking or permission of instructor. Further exploration of cut, hand-drawn, and photographic stencil techniques and printing on a variety of surfaces.

#### **PAPR 421 Drawing, Advanced.**

Semester course; 9 studio hours. 3 credits. May be repeated for a maximum of 15 credits. Prerequisite: Three credits of intermediate drawing or permission of instructor. A studio for drawing with individual criticism. Special attention is given to contemporary concepts.

#### **PAPR 423 Experimental Printmaking.**

Semester course; 2 lecture and 6 studio hours. 4 credits. May be repeated for a maximum of eight credits. Prerequisite: Three credits of intermediate printmaking or permission of instructor. Relief printing, collographs, monoprints, photoengraving, and mixed media will be investigated.

#### **PAPR 424 Drawing, Advanced.**

Semester course; 9 studio hours. 3 credits. Offered only in summer school. Prerequisite: Three credits of intermediate drawing or permission of instructor. A studio drawing course set up with individual criticism dealing with contemporary concepts.

#### **PAPR 448-449 Mural Painting.**

Continuous course; 2 lecture and 6 studio hours. 4-4 credits. Prerequisite: Permission of instructor. An investigation of the concepts and procedures involved in mural painting. The class will execute at least two murals during the year.

#### **PAPR 455-456 Drawing and Painting, Advanced.**

Continuous course; 9 studio hours. 3-3 credits. Prerequisite: Three credits of intermediate drawing or painting or permission of instructor. Advanced instruction in drawing and painting. Models, both nude and clothed, and still lifes are used.

#### **PAPR 490 Senior Seminar.**

Semester course; 3 lecture hours. 2 credits. Information to help graduating seniors in the department of painting and printmaking meet the professional requirements involved in exhibiting and promoting their creative work and in functioning as an artist. Writing intensive.

#### **PAPR 491 Topics in Painting and Printmaking.**

Semester course; 1-4 credits. May be repeated with different topics for a maximum of 12 credits. Topical course focusing on creative expression and research in the areas of painting and printmaking. See the Schedule of Classes for specific topics to be offered.

**These graduate courses may be taken by undergraduates for degree credit: PAPR 525 and PAPR 527, 528. See the Graduate Bulletin for course descriptions.**

## **Department of Photography and Film**

### **Dale L. Quarterman**

Professor and Chair (1969)  
B.F.A. University of Georgia  
M.S. 1972 Illinois Institute of Technology

Bremer, David M. (1972) Associate Professor  
B.F.A. Ohio University  
M.A. 1972 Ohio University  
Heroy, John N. (1971) Associate Professor  
B.F.A. Rochester Institute of Technology  
M.F.A. 1973 State University of New York  
Long, James T. (1981) Associate Professor  
B.F.A. 1976 University of Kansas  
M.Arch. 1979 University of Kansas  
Strommer, Joan E. (1979) Associate Professor  
B.F.A. University of Minnesota  
M.F.A. 1975 University of Minnesota

### **Emeriti faculty**

Lensen-Tomasson, Nancy, Associate Professor Emerita  
B.A. Wellesley College  
M.A. University of New Mexico  
M.F.A. University of New Mexico  
Nan, George D., Professor Emeritus  
B.F.A. Rochester Institute of Technology  
M.S. Illinois Institute of Technology

**The Department of Photography and Film** contributes to both the School of the Arts and the university as a whole. The department offers a variety of basic, intermediate and advanced black and white and color photography classes.

Beginning courses cover fundamentals and techniques and develop the visual senses. Advanced courses expand on the student's knowledge of the visual senses and help the student put together a well-developed portfolio.

On the intermediate and advanced levels, the department offers a limited number of classes in Super 8 and 16mm filmmaking techniques.

### **Admission criteria**

Students seeking admission to the bachelor of fine arts degree program in photography and film must meet admission requirements for both the School of the Arts and the university.

For prospective freshman, admission will be considered on the basis of:

- A. high school record (course studies, grades earned, cumulative GPA and class rank)
- B. SAT scores
- C. extracurricular activities
- D. evidence of interest and motivation as assessed by the Admissions Committee
- E. counselor's or person familiar with the applicant's ability
- F. suitability of preparation for the intended field of study.

In rare instances, applicants who show promise but fall below admission



guidelines may be permitted to attend the university under special conditions.

The School of the Arts does not have specific high school unit requirements but does require applicants to have fulfilled and graduated from high school or hold a GED. Completion of studio course work is highly recommended. Applicants considered for admissions must complete the School of the Arts Portfolio Packet which is designed to measure the applicant's ability and aptitude for the visual arts.

### Portfolio packet

The Portfolio Packet for the Department of Photography and Film should be a slide portfolio containing a variety of works produced within the last two years that demonstrate the applicant's creative ability and visual arts potential. Slides should include original photographs and/or short films or videos. The portfolio should demonstrate an understanding of line, form, color, value, texture and composition quality.

### Transfer students

For transfer students, a portfolio of 15 to 20 photographs or a five-minute film should be submitted. Department faculty committees determine placement in all upper-level courses after evaluating the student's record and portfolio of creative work. The student should contact the department chair at the time of acceptance to arrange for this evaluation before actual enrollment.

### Continuation requirements

Freshmen will need to maintain a 2.5 GPA to advance in the program.

### Exit requirements

One hundred and twenty credits will be the minimum requirement for completion of the program. The breakdown of credits according to disciplines is as follows:

	Credits
Art Foundation	17
General education (includes English and art history)	33
Electives	12
Communication arts and design	6
Photography/film and major concentration	52
<b>Total</b>	<b>120</b>

In order to exit the program, students will be required to present photographic prints or screen a film in a "senior show."

### Majors, concentrations and specialty tracks

Students majoring in photography and film will receive a foundation in photography, media arts, visual communication and art history during the first and second years of study. Upper division students will be able to concentrate on the areas of still photography, filmmaking or a combination of both.

#### Still photography

Freshman year — fall	Credits
PHTO 243 Photography	3
ARTF 101 Conceptualization and Presentation	2
ARTF 103 Design Fundamentals	2
ARTF 105 Survey of World Art	4
ARTF 107 Introduction to the Arts	1
ENGL 101 Composition and Rhetoric	3
	<b>15</b>

Freshman year — spring	Credits
PHTO 233 Elements of Moving Image	4
ARTF 102 Conceptualization and Presentation	2
ARTF 104 Design Fundamentals	2
ARTF 106 Survey of World Art	4
ENGL 20__ (201-206)	3
	<b>15</b>

Sophomore year — fall	Credits
PHTO 341 Intermediate Photography (oral communication)	3
CARD 207 Introduction to Computer Technology	3
CARD 339 Media Presentation	3
ARTH 270 History of Motion Picture	3
ENGL 200 Composition and Rhetoric II	3
	<b>15</b>

Sophomore year — spring	Credits
PHTO 350 Concepts in Photography	3
PHTO 380 Digital Photography	3
PHTO 307 Procedures and Techniques	3
ARTH 489 History of Photography	3
English literature elective (ENGL 201-206)	3
	<b>15</b>

Junior year — fall	Credits
ARTH 472 History of Photography	3
PHTO 305 The Zone System	3
Major area of concentration	3
General education (quantity and form)	3
Elective	3
	<b>15</b>

Junior year — spring	Credits
PHTO 445 Color Photography	3
PHTO 306 Post Visualization	3
Major area of concentration	3
General education (social science)	3
Elective	3
	<b>15</b>

Senior year — fall	Credits
PHTO 441 Studio Photography	3
Major area of concentration	3
Major area of concentration	3
General education (humanities)	3
Elective (upper division)	3
	<b>15</b>

Senior year — spring	Credits
Major area of concentration	3
PHTO 420 Senior Portfolio (VI)	3
Major area of concentration	3
General education (science and laboratory)	4
Elective (upper division)	2
	<b>15</b>

Major areas of concentration
PHTO 309 View Camera
PHTO 351 Portrait Photography
PHTO 381 Digital Photography
PHTO 442 Location Photography
PHTO 445 Color Photography
PHTO 500 Photographic Studio and Seminar
PHTO 435 Professional Photographic Practices (Ethics)
PHTO 495 Internship in Photography or Film

Recommended Electives
ARTH 474 Studies in Film

#### Filmmaking

Freshman year — fall	Credits
PHTO 243 Photography and Communication	3
ARTF 101 Conceptualization and Presentation	2
ARTF 103 Design Fundamentals	2
ARTF 105 Survey of World Art	4
ARTF 107 Introduction to the Arts (Ethics)	1
ENGL 101 Composition and Rhetoric	3
	<b>15</b>

Freshman year — spring	Credits
PHTO 233 Elements of Moving Image	4
ARTF 102 Conceptualization and Presentation	2
ARTF 104 Design Fundamentals	2
ARTF 106 Survey of World Art	4
ENGL 20__ (201-206)	3
	<b>15</b>

Sophomore year — fall	Credits
PHTO 341 Intermediate Photography (oral communication)	3
CARD 207 Introduction to Computer Techniques	3
PHTO 392 Film Animation I	3
ARTH 270 History of Motion Picture	3
ENGL 200 Composition and Rhetoric II	3

15

Sophomore year — spring	Credits
PHTO 375 Filmmaking I	3
PHTO 380 Digital Photography I	3
Elective	3
ARTH 271 History of Motion Picture	3
English 20__ (201-206)	3

15

Junior year — fall	
PHTO 376 Filmmaking II	3
PHTO 377 The Film Image	3
PHTO 360 Digital Filmmaking I	3
General education (quantity and form)	3
Elective	3

15

Junior year — spring	
PHTO 481 Filmmaking III	3
PHTO 361 Digital Filmmaking II	3
Major area of concentration	3
General education (science and laboratory)	3
Elective	3

15

Senior year — fall	
PHTO 482 Filmmaking IV	3
PHTO 370 Filmmakers as Directors	3
ARTH 474 Studies in Film	3
Major area of concentration	3
General education (humanities)	3

15

Senior year — spring	
PHTO 483 Filmmaking V	3
PHTO 420 Senior Portfolio (WI)	3
Elective	3
Major area of concentration	3
General education (social science)	3

15

Major areas of concentration

ARTH 471 Film Theory

PHTO 380 Digital Photography I

PHTO 381 Digital Photography II

PHTO 393 Film Animation II

PHTO 435 Professional Photographic Practices

ARTH 470 History of Animated Feature Film

ARTH 471 Film Theory

ARTH 472 History of Photography

ARTH 474 Studies in Film (may be repeated three times)

PHTO 475-476 Filmmaking Workshop

PHTO 490 Motion Picture Special Effects

PHTO 495 Photography and Film Internship

#### Recommended electives

CARD 304 Sound Communication

CARD 334 Electronic Animation I

CARD 336 Video I (nonnarrative formats/documentary)

CARD 338 Computer Graphics II: 3-D Modeling

CARD 409 Video Editing

CARD 419 Electronic Imaging

CARD 434 Electronic Animation II

CARD 436 Video II (narrative formats)

CARD 438 Computer Graphics III: 3-D Animation

CARD 491 Studio Topics (video/experimental formats)

ENGL 381 Fiction into Film

MHIS 320 Music in Films

DANC 319, 320 Video/Choreography Workshop

THEA 203-204 Movement for the Actor

THEA 311-312 Advanced Movement for the Actor

### Minor in photography and film

Successful completion of the Art Foundation Program is a prerequisite for the minor which consists of at least 18 credits in photography and film courses. Of these 18, at least nine credits must be in upper-level courses.

### Courses in photography and film (PHTO)

#### PHTO 233 Elements of the Moving Image.

Semester course; 4 lecture hours. 4 credits. A survey of new media and their origins. An exploration of this visual phenomena and its relationship to modern society.

#### PHTO 243 Photography.

Semester course; 2 lecture and 3 studio hours. 3 credits. Adjustable camera is required. Study of fundamental camera techniques and basic photographic processes in relation to visual communication. An emphasis will be placed on photography's expressive possibilities.

#### PHTO 245 Design Photography I.

Semester course; 2 lecture and 3 studio hours. 3 credits. For communication art and design majors only or permission of instructor. A comprehensive beginning class covering an introduction to the camera, the process of exposure, developing, and black and white printmaking. The emphasis is on proper procedures in the darkroom as well as providing an introduction to the photographic and visual concepts, critiques and experience with shooting a variety of subjects.

#### PHTO 305 The Zone System.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHTO 341 and 350, or permission of instructor. Students will learn to previsualize the photographic image through controlled exposure and film development techniques. Light

meters, lenses, and film will be tested and calibrated in order to determine proper exposure standards.

#### PHTO 306 Post Visualization.

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHTO 305 or permission of instructor. Students will learn practical applications of choosing the correct materials and techniques needed to produce a professional quality photographic print.

#### PHTO 307 Photographic Processes and Techniques.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 243 or 245 or permission of instructor. Various alternative photographic processes will be explored. Emphasis is placed upon technical expertise and creation of a body of work incorporating these various processes.

#### PHTO 309 View Camera Operation and Technique.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 243 or 245 or permission of instructor. A course in understanding and using the 4x5 view camera for optimum photographic results. Emphasis is on how the camera functions, the use of Polaroid materials, and developing and printing larger format negatives to produce high quality prints.

#### PHTO 341 Intermediate Photography.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 245 or permission of the instructor. Emphasis is placed on expanding the student's ability to express ideas photographically. Course projects include a balance documentary/straight assignment in which the student must be able to capture images in the changing environment and studio assignments which call for a pre-planned solution shot. Students are introduced to relevant photographic materials and practices through lectures and demonstrations.

#### PHTO 350 Concepts in Photography.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 341 or permission of instructor. Students utilize the visual and technical skill mastered in previous courses to explore today's contemporary trends of photographic expression. Emphasis will be placed on developing an individual style.

#### PHTO 351 Portrait Photography.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisite: PHTO 345 Design Photography or PHTO 350 Intermediate Photography. Adjustable camera required. Exploring the various visual possibilities of the use of portrait photography.

#### PHTO 360 Digital Filmmaking I.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: CARD 207 and PHTO 380. Surveys the digitally based studies including computer animation, computer imaging, digital film and video, networked computing, interactive multimedia and related areas.

#### PHTO 361 Digital Filmmaking II.

Semester course; 2 lecture and 3 studio hours. 3 credits. Prerequisites: CARD 207, PHTO 380 and PHTO 360. Surveys the procedural, technical and creative applications of the digital environment for the preproduction, production and postproduction phases in the making of a film.

**PHTO 370 Filmmaker as Director.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: PHTO 376 or permission of instructor. Develop a methodology for working with actors in a film production, by arranging auditions, creating an environment for improvisation, and analyzing an actor's performance. Learn how to integrate a performance into the total filmmaking process.

**PHTO 375 Filmmaking I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: PHTO 233. Techniques for production of short silent films with emphasis on the concept of visual language.

**PHTO 376 Filmmaking II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: PHTO 375, PHTO 233. Techniques for production of short film projects in 16mm format with emphasis on light as the primary expressive tool.

**PHTO 377 The Film Image.**

Semester course; 3 lecture hours. 3 credits. May be repeated up to nine credits. An examination of production techniques and problems encountered by the filmmaker in creating the motion picture image. A selected number of narrative, documentary, experimental and animated films are viewed as source material and dealt with from a production point of view. The films chosen for discussion vary from semester to semester.

**PHTO 380 Digital Photography I.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: CARD 207 or permission of instructor. Students will have the opportunity to edit, manipulate and print their photographically derived images through the use of current image editing software.

**PHTO 381 Digital Photography II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: PHTO 380 or permission of instructor. Using photographic image-editing software, students will learn how to achieve accurate color output through familiarization with the effects of color calibration, printing inks, and color separations. Color comps and/or color separations will be produced through the use of a service bureau.

**PHTO 392 Film Animation.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Techniques for the production of short animated films.

**PHTO 393 Film Animation II.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: PHTO 392. Advanced techniques for the production of a short animated film.

**PHTO 420 Senior Portfolio.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: Senior status in photography and film concentration. To be taken in the last semester of the senior year. Critical analysis and development of the student's exit portfolio with emphasis on a consistent visual style with thematic concepts, inherent in the body of work.

**PHTO 435 Professional Photographic Practices.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Senior status in photography and film concentration. The study of vocabulary, procedures, and working realities specific to the occupations of photography and film. Develop necessary skills for entry-level employment in areas of photography and film.

**PHTO 441 Studio Photography.**

Semester courses; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: PHTO 341, 350, 309 or permission of instructor. A course that explores various studio applications of photography through the utilization of tungsten and strobe lighting. Lectures and studio assignments will explore table top, still life and food photography. Assignments will be produced in black and white and color. Professional standards are stressed.

**PHTO 442 Location Photography.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: PHTO 309, 341, 350 or permission of instructor. A course that explores the technical, aesthetic and logistic experience of a professional photographer working on location. Assignments will be produced in black and white and color. Professional standards are stressed.

**PHTO 445 Color Photography.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
May be repeated for maximum of six credits. Prerequisite: PHTO 350 or permission of instructor. This course is designed to enhance the creative use of color in photography through comprehensive hands-on experience of negative to positive printing.

**PHTO 475-476 Filmmaking Workshop.**

Continuous course; 1 lecture and 6 studio hours. 3-3 credits.  
Prerequisite: Permission of instructor. The production of a motion picture to be directed by faculty with the assistance of students in the various production crew roles.

**PHTO 481 Filmmaking III.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: PHTO 376. Techniques for production of short film projects in 16mm format with emphasis on sound as an integral part of production.

**PHTO 482 Filmmaking IV.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisites: PHTO 481 and permission of instructor. Advanced techniques for the production of an individual short film project in 16mm format with sound.

**PHTO 483 Filmmaking V.**

Semester course; 2 lecture and 3 studio hours. 3 credits.  
Prerequisite: PHTO 482. The editing, printing, and marketing of an individual, short film project begun in Film IV.

**PHTO 490-491 Motion Picture Special Effects.**

Continuous course; 1 lecture and 6 studio hours. 3-3 credits.  
Prerequisite: PHTO 376 or permission of instructor. An exploration of special effects for film production which may be created both in the camera and with a printer.

**PHTO 495 Photography and Film Internship.**

Semester course; 10 hours per week for a total of 150 hours of professional work experience. 3 credits. Prerequisite: Consent of coordinator and department chair. Supervised practical work experiences are coordinated with professionals in the field of photography or film.

**PHTO 500 Photographic Studio and Seminar.**

Semester course; 1 lecture and 6 studio hours. 3 credits.  
Prerequisite: Permission of instructor. Experimentation in the studio with various processes for creating the photographic image, leading to producing a cohesive body of work. The seminar examines the technical and aesthetic components of these processes and the language and theories of photographic criticism.

**Department of Sculpture****Joseph H. Seipel**

Associate Professor and Chair (1974)  
B.S. 1970 University of Wisconsin  
M.F.A. 1973 Maryland Institute College of Art,  
Rinehart School of Sculpture

Helfgott, Myron (1968) Professor  
B.A. Southern Illinois University  
M.F.A. 1964 Southern Illinois University  
Henry, Charles R. (1968) Professor  
B.F.A. 1965 Cleveland Institute of Art  
M.F.A. 1968 Cranbrook Academy of Art  
King, Elizabeth C. (1985) Associate Professor  
B.F.A. 1972 San Francisco Art Institute  
M.F.A. 1973 San Francisco Art Institute  
Newton, Carlton R. (1987) Assistant Professor  
B.F.A. 1972 San Francisco Art Institute  
M.F.A. 1978 San Francisco Art Institute  
Van Winkle, Lester G. (1969) Professor  
B.S. East Texas State University  
M.A. 1969 University of Kentucky

**Emeriti faculty**

North, Harold E., Professor Emeritus  
B.F.A. Rhode Island School of Design  
M.F.A. Virginia Commonwealth University

The Department of Sculpture's mission is to create an environment of high expectation regarding self-motivation, intellectual capacity and responsibility. Its students explore technology's parameters, and discover applications to new and traditional modes of expression. By encouraging students to take a wide range of courses within the university, the department continues to stress the links between art, science, the humanities, and the conditions of the world. The department's goal is to provide students with the seeds of discernment, vocabulary, and skills of analysis and

synthesis to become participants in the dialogue of contemporary society.

Within this context, students strive to measure up to the best performances modeled for them by their peers and by faculty who engage in vital research.

### Degree requirements in sculpture

	Credits
Studios	
Art Foundation Program	16
Sculpture	40
(No more than eight credits of SCPT 491 Topics in Sculpture will apply toward this requirement. Senior Seminar is required.)	
Painting and printmaking	14
General studies	
Introduction to the arts	1
Art history	14
English 101, 200	6
Literature	6
Approved electives to include three credits in social sciences, three credits in mathematics,* and four credits in laboratory science	10
Open electives	23
	<hr/> 130

\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

### Minor in sculpture

Successful completion of the Art Foundation Program is a prerequisite for the minor which consists of at least 18 credits in sculpture. Of these 18, at least nine credits must be in upper-level courses, and 16 credits must be in SCPT 211/212, SCPT 311/312 or SCPT 411/412.

### Courses in sculpture (SCPT)

#### SCPT 209, 210 Introduction to Sculpture.

Semester courses; 2 lecture and 3 studio hours. 3, 3 credits. The course will offer an opportunity for students to work with some of the ideas and materials of sculpture through slides, lecture and studio involvement.

#### SCPT 211, 212 Sculpture.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. The primary goal of this course is the effective expression of ideas. The student is introduced to the basic tools, materials, and techniques with attention given to problem solving.

#### SCPT 217, 218 Sculptural Concepts.

Semester courses; 3 lecture and 3 studio hours. 4, 4 credits. Prerequisite: Permission of instructor. A study of contemporary technology, philosophy, criticism, and their relation to material resources and technical practices.

#### SCPT 311, 312 Sculpture.

Semester courses; 3 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of eight credits. The emphasis in this course is on creative independence. The student is encouraged to utilize a variety of materials in order to express his ideas.

#### SCPT 313, 314/413, 414 Dimensional Concepts.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. An opportunity for the sculpture student to extend and expand upon traditional methods of expression and to explore new areas.

#### SCPT 411, 412 Sculpture.

Semester courses; 2 lecture and 6 studio hours. 4, 4 credits. May be repeated for a maximum of 16 credits. The majority of the student's activities occur in his own studio with emphasis on the development of a personal style.

#### SCPT 417 Seminar in Contemporary Sculpture.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. A forum for consideration and discussion of recent developments.

#### SCPT 419 Professional Studio Practicum.

Semester course; 9 studio hours. 3 credits. May be repeated. Prerequisite: Permission of chair. A studio class that provides a continuation of the student's work in sculpture. This course will be recorded as an elective for a sculpture major.

#### SCPT 491 Topics in Sculpture.

Semester course; 1-4 credits. May be repeated for a maximum of 16 credits. Prerequisite: Permission of instructor. A seminar or workshop on a selected issue or topic in the field of sculpture. Writing intensive. See the Schedule of Classes for specific topic(s) to be offered each semester.

#### SCPT 500, 600 Graduate Sculpture.

Semester course; 4, 8, or 12 studio hours. 2, 4, or 6 credits. May be repeated. Emphasis on individual creative production with periodic exposure of student's work and ideas to the critical attention of the teaching faculty of the department of sculpture and other graduate students.

#### SCPT 517 Seminar in Contemporary Sculpture.

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. A forum for consideration and discussion of recent developments in the field.

#### SCPT 590 Graduate Seminar.

Semester course; 1 or 4 lecture hours. 1 or 4 credits. May be repeated. Degree requirement for graduate students in the department of sculpture. Weekly seminar for the purpose of exploring recent developments in sculpture and conducting critiques in which students can discuss the ideas and attitudes manifest in their work.

#### SCPT 591 Topics in Sculpture.

Semester course; variable; 1-4 credits. May be repeated for a maximum of 12 credits. This course will explore selected topics of current interests or needs relative to sculpture. See Schedule of Classes for specific topics to be offered each semester.

### Department of Theatre

#### David S. Leong

Professor and Chair (1996)  
B.A. 1973 University of New Hampshire  
M.F.A. 1975 University of North Carolina, Greensboro

#### Gary C. Hopper

Associate Professor and Assistant Chair (1976)  
B.S. University of Wisconsin  
M.A. University of Wisconsin  
M.F.A. 1972 Boston University

Black, George W. (1994) Professor  
A.B. 1957 Spring Hill College  
M.A. 1963 Tulane University  
Ph.D. 1970 University of Georgia  
Barnes-McLain, Noreen (1999) Associate Professor  
B.A. 1977 University of Delaware  
M.A. 1979 Tufts University  
Ph.D. 1986 Tufts University  
Erickson, Maurice L. (1970) Associate Professor  
B.S. Dickinson State College  
M.F.A. 1970 Ohio University  
Hopper, Elizabeth A. (1974) Associate Professor  
B.A. University of Evansville  
M.F.A. 1968 University of Wisconsin, Madison  
Keller, Ronald E. (1984) Associate Professor  
B.A. 1978 University of Northern Iowa  
M.F.A. 1984 University of Massachusetts  
Rodgers, Janet B. (1987) Associate Professor  
A.B. 1969 Mount Holyoke College  
M.F.A. 1975 Brandeis University  
Sims, Marvin L. (1998) Associate Professor  
B.A. Capital University  
M.A. Miami University of Ohio  
M.F.A. Southern Illinois University  
Szari, Louis J. (1979) Associate Professor  
B.S. 1970 Kent State University  
M.A. 1972 Kent State University  
M.F.A. 1976 University of Texas

#### Emeriti faculty

Newdick, Richard L., Professor Emeritus  
B.A. University of Maine  
M.A. University of North Carolina

The mission of the Department of Theatre is to educate and train students as theatre professionals and/or academicians in the field of performance, design/technology or theatre pedagogy. In fulfilling its mission, the Department of Theatre provides students with the professional and

cultural foundations essential for achieving the highest standards of the art. Applicants are admitted based on demonstration of ability, genuine interest determined during an interview, and audition and/or portfolio presentation.

The Department of Theatre provides students with the professional and cultural foundations essential for achieving the highest standards of the art. Applicants are admitted based on demonstration of ability, genuine interest determined during an interview, and audition and/or portfolio presentation.

The department offers two B.F.A. degrees: one in theatre with emphasis on either performance or design/technical and stage management; the other in theatre education which leads to the certification required for teaching theatre, speech and English in the public schools.

Because of the environment that exists in these preprofessional programs, all aspects of theatre — as art, craft, business and education — are experienced together. The curriculum immerses students in the practicalities of theatre. Throughout the four years, the performer works daily with voice, body and imagination, while the designer/technician is involved in studio classes and practical application. Prospective theatre educators engage in intensive teacher training activities that lead to certification.

The department also serves students throughout the university with offerings in speech communication.

### Master of Fine Arts in Theatre Program

The Department of Theatre offers the master of fine arts degree in two advanced degree options, the professional studio and theatre education. Studio degrees are offered in acting, directing, scene design and costume design. In collaboration with its professional affiliate, TheatreVirginia, a constituent member of the League of Professional Theatres, TheatreVCU develops skills which allow students to directly enter the profession upon completion of the degree program. The Theatre Education Program prepares the theatre educator to enter the academic theatre profession. The Theatre Education Program prepares the theatre educator to enter

the academic theatre profession at the university or college teaching level. Areas of concentration can be chosen from acting, directing, scene design, costume design, voice and speech for the stage, movement for actors and stage combat, theatre history, literature and dramatic criticism. The degree tracks each require 60 credit hours and three years to complete. See the Graduate Bulletin for a more detailed description of this program.

### Degree requirements in theatre

#### Performance emphasis

	Fall	Spring
<b>First year</b>		
THEA 103/104 Stagecraft/Costume Construction	3	3
THEA 113-114 Acting I	3	3
THEA 211-212 Introduction to Drama	3	3
ENGL 101 Composition and Rhetoric I	3	
SPCH 121 Effective Speech		3
Mathematics elective*	3	
ARTH 103-104 Survey of Western Art	3	3
Social/behavioral science		3
	<hr/> 18	<hr/> 18

#### Second year

THEA 201-202 Stage Voice and Speech	3	3
THEA 203-204 Movement for the Actor	3	3
THEA 213-214 Acting II	3	3
THEA 221, 221L Basic Scene Design and Laboratory or THEA 227, 227L Basic Costume Design and Makeup and Laboratory	4	
THEA 229, 229L Introduction to Lighting Design and Laboratory or THEA 228, 228L Basic Costume Design and Makeup and Laboratory		4
ENGL 200 Composition and Rhetoric II	3	
Ethics elective		3
Electives	2	2
	<hr/> 18	<hr/> 18

#### Third Year

THEA 301-302 Advanced Stage Voice and Speech	3	3
THEA 313-314 Actor's Studio I	3	3
THEA 403, 404 History of Dramatic Literature or THEA 423, 424 Modern Drama	3	3
Laboratory science	4	
Electives	2	6
	<hr/> 15	<hr/> 15

#### Fourth Year

THEA 413-414 Actor's Studio II	3	3
THEA 311-312 Advanced Movement for the Actor	3	3
THEA 307-308 History of Theatre	3	3
Electives	5	5
	<hr/> 14	<hr/> 14

\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

#### Theatre education

	Fall	Spring
<b>First year</b>		
THEA 103, 104 Stagecraft, Costume Construction	3	3
ENGL 205, 206 American Literature		3
THEA 113-114 Acting I	3	3
ENGL 101 Composition and Rhetoric I	3	
Social science elective	3	
Laboratory science elective	4	4
Mathematics elective		3
Electives	2	2
	<hr/> 18	<hr/> 18

#### Second year

ENGL 200 Composition and Rhetoric II	3	
THEA 201-202 Stage Voice and Speech	3	3
THEA 221 Basic Scene Design	3	
THEA 227 Basic Stage Costuming and Makeup	3	
THEA 229 Introduction to Lighting Design		3
THEA 307-308 History of Theatre	3	3
ENGL 203, 204 English Literature	3	
HIST 104 Introduction to American History		3
EDUS/ENGL 307 Teaching Writing Skills		3
Social science elective		3
	<hr/> 18	<hr/> 18

#### Third year

THEA 361-362 Directing	3	3
THEA 403, 404 History of Dramatic Literature, or THEA 423, 424 Modern Drama	3	3
HLTH 300 Introduction to Health Education	3	
EDUS 300 Foundations of Education	3	
EDUS 301 Human Development and Learning		3
ENGL 400 or 401 Shakespeare	3	
Literature or writing electives	3	3
Linguistics elective		3
Social science elective		3
	<hr/> 18	<hr/> 18

**Fourth year**

TEDU 537 Secondary School Curriculum	3	
EDU 310-004 Practicum: Secondary	2	
EDU 548 Teaching Secondary School English	3	
EDU 310-008 Practicum: English	1	
TEDU 485 Directed Student Teaching I		6
TEDU 486 Directed Student Teaching II		6
EDU/ENGL 433 Literature for Adolescents	3	
SPCH 321 Speech for Business and the Professions	3	
	15	12

**Stage management/technical production**

Fall Spring

**First year**

THEA 103/104 Stagecraft/Costume Construction	3	3
THEA 113, 114 Acting I	3	3
THEA 211-212 Introduction to Drama	3	3
ENGL 101/SPCH 121 Composition and Rhetoric I/Effective Speech	3	3
Natural science and laboratory	4	
Social/behavioral science	-	3
ARTF 121/122 or 109 Drawing	2	2
	18	17

**Second year**

ARTH 103 or 104 Art History or Non-Western Art History	3	3
ENGL 200 Composition and Rhetoric II	-	3
Math elective*	3	
THEA 221 Basic Scene Design and Laboratory	4	
THEA 227/228 Basic Stage Costuming and Make-up and Laboratories	4	4
THEA 229 Basic Stage Lighting and Laboratory	-	4
MUSC 191-192 Music	1	1
ACCT 203 Accounting	3	
Electives	-	3
	18	18

**Third year**

THEA 403-404 History of Dramatic Literature or THEA 423-424 Modern Drama	3	3
THEA 307-308 History of the Theatre	3	3
THEA 361-362 Directing	3	3
THEA 325 Stage Management	-	3
INFO 161, 162, 163 Computers/Word Processing	3	
Electives	3	3
	15	15

**Fourth year**

ENGL Shakespeare	3	
HLTH 480 Safety, First Aid, and CPR	-	3
Electives**	12	11
	15	14

\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

All stage management students are required to work on TheatreVCU productions. This requirement gives them the opportunity to put into practice those skills learned in classes. Those assignments will be determined by the faculty supervisor.

Electives are to be decided with the student's faculty adviser. The Equity Stage Managers suggest classes in Voice and Dialects, Stage Movement, Stage Combat and Weapons Safety, Advanced Design, Computer Technology, Technical Drawing and Drafting, Personal Management, and Film Production.

\*\* Students may be asked to act as assistant stage manager for a graduate stage manager or to work as a stage manager under a faculty director during TheatreVCU's season. These credits may be taken as R&P or electives.

Students, in consultation with their adviser, also may elect to have one semester of their senior year as a professional internship at an approved theatre.

**Scene design/technical production**

Fall Spring

**First year**

THEA 103/104 Stagecraft/Costume Construction	3	3
THEA 113/114 Acting I	3	3
ARTF Drawing	2	2
THEA 211-212 Introduction to Drama	3	3
ENGL 101/SPCH 121 Composition and Rhetoric I/Effective Speech	3	3
Natural science and laboratory	4	
Social/behavioral science	-	3
	18	17

**Second year**

ARTH 103 or 104 Art History or non-Western Art History	3	3
ENGL 200 Composition and Rhetoric II	-	3
THEA 221 Basic Scene Design and Laboratory	4	
THEA 229 Basic Lighting Design and Laboratory	-	4
ARTF Design Fundamentals	2	2
THEA 223-224/323-324 Theatre Practicum	6	6
Mathematics elective*	3	
	18	18

**Third year**

THEA 227-228 Basic Stage Costuming and Make-up	3	3
THEA 307-308 History of Theatre	3	3

THEA 403-404 or 423-424 History of

Dramatic Literature or Modern drama	3	3
Design electives***	6	6
	15	15

**Fourth year**

English Shakespeare	3	
Design electives***	6	9
Electives	2	6
Ethics elective	3	
	14	15

\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

\*\* Practicums consist of working in the Scene Shop under the supervision of the technical director during the second and third years. This requirement may be accompanied by morning teaching sessions in the skills required. All scenic design majors are required to work in the Scene Shop on the shows produced by TheatreVCU. This gives them the opportunity to put into practice those skills learned in classes. Those assignments will be determined by the faculty supervisor.

Design electives are to be decided with your faculty adviser. They may include the following classes: Scene Design 305-306; Scene Design 505-506; Scene Painting 508; Costume Design 321-322; Stage Management; Advanced Lighting; Technical Drawing; or Advanced Scenic Techniques. Design electives also may consist of classes in other departments of the School of the Arts such as sculpture, furniture construction, jewelry, architecture and interior design.

\*\*\* Students may be asked to act as a design assistant for a faculty designer or to design one aspect of one of TheatreVCU's seasons. This may be taken as a senior seminar or as a design elective. Students, in consultation with their adviser, also may elect to have one semester of their senior year as a professional internship at an approved theatre.

**Costume design/technical production**

Fall Spring

**First year**

THEA 103/104 Stagecraft/Costume Construction	3	3
THEA 113-114 Acting I	3	3
ARTF Drawing/Color Theory	2	2
THEA 211-212 Introduction to Drama	3	3
ENGL 101/SPCH 121 Composition and Rhetoric I/Effective Speech	3	3
Natural science and laboratory	4	
Mathematics elective*	-	3
	18	17

**Second year**

ARTH 103 or 104 Survey of Western Art	3	
ENGL 200 Composition and Rhetoric II	-	3
THEA 227-228 and 227L and 228L Basic Stage Costuming and Make-up and Laboratory	4	4
THEA 309-310 History of Costume	3	3
ARTF Design Fundamentals	2	2
FASH 202 or FASH 203-204 Patternmaking or Draping	3	3
Electives	3	3
	<hr/>	<hr/>
	18	18

**Third year**

THEA 307-308 History of Theatre	3	3
THEA 221 Basic Scene Design	3	
THEA 229 Basic Lighting Design	-	3
THEA 403-404 or THEA 423-424 History of Dramatic Literature or Modern Drama	3	3
Non-Western Art History	3	
Design electives	3	6
	<hr/>	<hr/>
	17	15

**Fourth year**

English Shakespeare	3	
Design electives**	6	9
Electives	2	5
Social science elective*	3	
Ethics elective	3	
	<hr/>	<hr/>
	15	14

\* In accordance with the school's general education requirements, a student who scores at least 550 on the mathematics portion of the SATs or has earned a "B" or higher grade in high school Algebra II or Geometry is exempted from the mathematics requirement. Students who meet this requirement will select an elective to fulfill three credits.

All Costume majors are required to work in the Scene Shop on the shows produced by TheatreVCU. This gives them the opportunity to put into practice those skills learned in classes. Those assignments will be determined by the faculty supervisor.

Design electives are to be decided with the student's faculty adviser. They may include the following classes: Research Techniques for Costume Design 321-322; Advanced Costume Design 421-422; Scene Design 305-306; Scene Painting; and Advanced Scenic Techniques. Design electives also may consist of classes in other departments of the School of the Arts, such as Draping, History of 20th Century Fashion, Textiles, Jewelry Making, Fashion Drawing, Figure Drawing, or Tailoring.

\*\* Students may be asked to act as a design assistant for a faculty designer or to design one aspect of one of TheatreVCU's seasons. This may be taken as a Senior Seminar or as a design elective. Students, in consultation with their adviser, also may elect to

have one semester of their senior year as a professional internship at an approved theatre.

**Courses in speech (SPCH)****SPCH 103 Voice and Diction.**

Semester course; 1 lecture hour. 1 credit. Principles and techniques of effective production of the speaking voice and articulation of the sounds of American English.

**SPCH 121 Effective Speech.**

Semester course; 3 lecture hours. 3 credits. Structured speaking and critical listening experiences within the basic forms of speech communication: interpersonal, small group, and public.

**SPCH 262 Speech for Broadcast News.**

Semester course; 3 lecture hours. 3 credits. Theory and application of oral communication skills necessary to produce an effective general American speech pattern suitable for radio and television.

**SPCH 321 Speech for Business and the Professions.**

Semester course; 3 lecture hours. 3 credits. Theory and practice in the oral communication process. Organization and presentation of informative and persuasive subject matter in professional contexts related to the student's major area of interest.

**SPCH 401-402 Oral Interpretation of Literature.**

Continuous course; 3 lecture hours. 3-3 credits. Theory and practice in the analysis and oral presentation of prose, poetry, and dramatic literature.

**Courses in theatre (THEA)****THEA 103 Stagecraft.**

Semester course; 3 lecture hours. 3 credits. The fundamental methods, materials, and techniques of set construction for the stage. Participation in departmental productions.

**THEA 104 Costume Construction.**

Semester course; 3 lecture hours. 3 credits. The fundamental methods, materials, and techniques of costume construction for the stage. Participation in departmental productions.

**THEA 107, 108 Introduction to Stage Performance.**

Semester courses; 3 lecture hours. 3, 3 credits. For non-theatre majors. A survey and application of the basic elements in stage performing; acting, scene study, voice, and movement.

**THEA 113-114 Acting I.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Open only to theatre majors upon satisfactory audition. Development of personal resources; an exploration of performance skills through theatre games, role playing, improvisation, and work on basic script units.

**THEA 201-202 Stage Voice and Speech.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Open only to theatre majors upon satisfactory audition. A study of the basic elements of voice and speech to include International Phonetic Alphabet, ear training, sound production,

breathing, and application of voice and speech elements to prose and poetry.

**THEA 203-204 Movement for the Actor.**

Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Open to theatre majors only. A study of the basic elements of movement for the actor.

**THEA 211-212 Introduction to Drama.**

Continuous course; 3 lecture hours. 3-3 credits. Analysis and critical examination of plays for methods of interpretation and production qualities. Writing intensive.

**THEA 213-214 Acting II.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Prerequisite: THEA 113-114 or equivalent. Open only to theatre majors upon satisfactory audition. A practical application of the psychophysical basis of acting through exploration, improvisation, scoring, and performance of scenes.

**THEA 221 Basic Scene Design.**

Semester course; 3 lecture hours. 3 credits. A study of the basic techniques used in designing space for theatre productions. Participation in departmental productions.

**THEA 221L Basic Scene Design Laboratory.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 223-224 Practicum in Theatre Technology.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: THEA 103, 104. Advanced problem solving in one or more areas of technical theatre.

**THEA 223L, 224L Practicum in Theatre Technology Laboratory.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 225 Basic Stage Electronics-Lighting.**

Semester course; 3 lecture hours. 3 credits. A study of the properties and basic principles of electricity as they relate to the utilization of light on the stage. Participation in departmental productions.

**THEA 225L Basic Stage Electronics-Lighting Laboratory.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 227-228 Basic Stage Costuming and Makeup.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. Prerequisite: THEA 104 or permission of instructor. A study of the techniques used to dress the performer, including design theory and makeup application. Participation in departmental productions.

**THEA 227L, 228L Basic Stage Costuming and Makeup Laboratory.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 229 Introduction to Lighting Design.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Basic elements of lighting design, composition, orchestration, and color. Participation in departmental productions.

**THEA 229L Introduction to Lighting Design Laboratory.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 251, 252/351, 352/451, 452 Rehearsal and Performance.**

Semester courses; 2, 4, or 6 studio hours. 1, 2, or 3 credits. Work in acting, management, design, or technical areas within a Theatre VCU production.

**THEA 301-302 Advanced Stage Voice and Speech.**

Continuous course; 2 lecture and 2 studio hours. 3-3 credits. May be repeated for a maximum of 6-6 credits. Open only to theatre majors upon satisfactory audition. First semester: study and practice in the use of voice and speech applied to the plays of Shakespeare. Second semester: study of major stage dialects.

**THEA 303/AFAM 303 Black Theatre.**

Semester course; 3 lecture hours. 3 credits. A study of the major developments in the evolution of black theatre through readings and studio performances in black-related and black theatre dramaturgy.

**THEA 305, 306 Scene Design.**

Semester courses; 1 lecture and 4 studio hours. 3, 3 credits. Prerequisite: THEA 221 and permission of instructor. A study of the techniques and methods of scenic design. Participation in departmental productions.

**THEA 305L, 306L Scene Design Laboratory.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories discussed in design technical courses.

**THEA 307-308 History of the Theatre.**

Continuous course; 3 lecture hours. 3-3 credits. A study and analysis of theatre history: the architecture, the performer and performances, the stage, the production methods, and the audience.

**THEA 309, 310 History of Costumes.**

Semester courses; 3 lecture hours. 3, 3 credits. Illustrated lectures on the history of clothing from primitive times to the present.

**THEA 311-312 Advanced Movement for the Actor.**

Continuous course; 1 lecture and 6 studio hours. 3-3 credits. Prerequisite: THEA 203-204. Open to theatre majors only. An advanced level approach to movement for the actor emphasizing

physical control, flexibility, and various techniques of stage combat with and without weaponry.

**THEA 313-314 Actor's Studio I.**

Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: THEA 213-214 or equivalent. Open only to theatre majors upon satisfactory audition. Alternative forms of script analysis and character study. Concentrated work on specific acting problems.

**THEA 321, 322 Research Techniques for Costume Design.**

Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisite: Permission of instructor. A seminar in research and design of costumes for the theatre, including discussion of fabrics and special construction methods used in stage costuming. Participation in departmental productions.

**THEA 321L, 322L Research Techniques for Costume Design Laboratory.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 323-324 Practicum in Advanced Theatre Technology.**

Continuous course; 6 studio hours. 3-3 credits. Prerequisite: Permission of instructor. Advanced problem-solving in technical theatre, with special emphasis on multimedia and new design materials.

**THEA 323L, 324L Practicum in Advanced Theatre Technology.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 325 Stage Management.**

Semester course; 2 lecture and 2 studio hours. 3 credits. Prerequisite: Permission of instructor. The fundamental responsibilities and techniques of professional stage management.

**THEA 326 Basic Stage Electronics-Sound.**

Semester course; 3 lecture hours. 3 credits. A study of the basic techniques used to create sound for theatre productions. Participation in productions.

**THEA 326L Basic Stage Electronics-Sound Laboratory.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 327 Technical Drawing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: THEA 221 and permission of instructor. Open to theatre majors only. A practical approach to drafting for the theatre, preparation and presentation, including perspective, rotation, development, and graphic solutions pertaining to theatrical construction problems.

**THEA 330, 331/430, 431 Production.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours.

3 or 6 credits per semester. Open only to theatre majors. The design, rehearsal, and performance of dramatic works.

**THEA 340, 341/440, 441 Theatre Projects.**

Semester courses; 1 or 2 lecture and 4 or 8 laboratory hours. 3 or 6 credits per semester. Open only to theatre majors. Individual or group projects in acting, directing, costume design, stage design, or dramaturgy.

**THEA 361-362 Directing.**

Continuous course; 3 lecture hours. 3-3 credits. Open only to theatre majors. Lectures and discussions on the theories of stage direction; problems involved in the production of period plays and a study of modern theories. Writing intensive.

**THEA 403, 404 History of Dramatic Literature.**

Semester courses; 3 lecture hours. 3, 3 credits. Study and analysis of dramatic literature. First semester: Aeschylus through Shakespeare. Second semester: Corneille to Ibsen.

**THEA 407 Advanced Scenic Technique.**

Semester course; 1 lecture and 4 studio hours. 3 credits. Prerequisite: THEA 221 or permission of instructor. An intensive involvement in contemporary theory and practice of scenic techniques. Participation in departmental productions.

**THEA 407L Advanced Scenic Technique Laboratory.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 413-414 Actor's Studio II.**

Continuous course; 1 lecture and 4 studio hours. 3-3 credits. Prerequisite: THEA 313-314 or equivalent. Advanced character and script analysis. Concentrated work on personal performance limitations and acting problems of each student.

**THEA 421, 422 Advanced Costume Design.**

Semester courses; 2 lecture and 2 studio hours. 3, 3 credits. Prerequisites: THEA 321, 322, or permission of instructor. An advanced study of the techniques, methods, and problems of costume design for the student who plans to enter the field professionally.

**THEA 421L, 422L Advanced Costume Design Laboratory.**

Semester courses; 2 studio hours. 1, 1 credit. The practical application in production of the ideas, principles, and theories, discussed in design/technical courses.

**THEA 423, 424 Modern Drama.**

Semester courses; 3 lecture hours. 3, 3 credits. Intensive study of major continental and American plays.

**THEA 426/ENGL 426 Playwriting.**

Semester course; 3 lecture hours. 3 credits. May be repeated once for credit. Prerequisite: ENGL 317 or permission of instructor. A practical introduction to the creation of original scripts for theatre. Works may be selected for reading and performance. May not be used to satisfy the College of Humanities and Sciences' requirement in literature.



**THEA 429 Advanced Lighting Design.**

Semester course; 2 studio hours. 3 credits. A study of light as a method of creating mood within stage settings. Participation in departmental productions.

**THEA 429L Advanced Lighting Design Laboratory.**

Semester course; 2 studio hours. 1 credit. The practical application in production of the ideas, principles, and theories discussed in design/technical courses.

**THEA 435/ENGL 435 Creative Writing: Poetry.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: Permission of instructor. Study of the craft of writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of quality work and to become proficient in critical analysis in order to evaluate and articulate the strength of their own poetry. May not be used to satisfy the College of Humanities and Sciences' requirement in literature.

**THEA 437/ENGL 437 Creative Writing: Fiction.**

Semester course; 3 workshop hours. 3 credits. May be repeated once for credit. Prerequisite: Permission of instructor. Study the craft of fiction writing, with instruction and guidance toward constructive self-criticism. Workshop members will be expected to produce a substantial volume of short stories or portion of a novel and to become proficient in the critical analysis of fiction in order to evaluate and articulate the strength of their own work. May not be used to satisfy the College of Humanities and Sciences' requirement in literature.

**THEA 461, 462 Advanced Directing.**

Semester courses; 3 lecture hours. 3, 3 credits. Prerequisites: THEA 361-362. Further study in direction techniques, especially the problems of the full-length play.

**THEA 490 Senior Seminar.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. Research and/or creative project in the drama major's area of special interest pursuant to graduate study or professional work in the student's chosen field.

**THEA 491 Topics in Theatre.**

Semester course; variable; 1-3 credits per semester. May be repeated for a maximum of nine credits. Flexible term course in selected aspects of performance, theory, literature, or history. See the Schedule of Classes for specific topics to be offered each semester.

**THEA 493, 494 Professional Internship.**

Semester courses; 3-9 credits. A practicum in theatre conducted in cooperation with selected professional or semi-professional theatre organizations.

**With permission of instructor, the following graduate courses may be taken by undergraduates for degree credit: THEA 501-502, THEA 505-506, THEA 508 and THEA 513-514. See the Graduate Bulletin for course descriptions.**

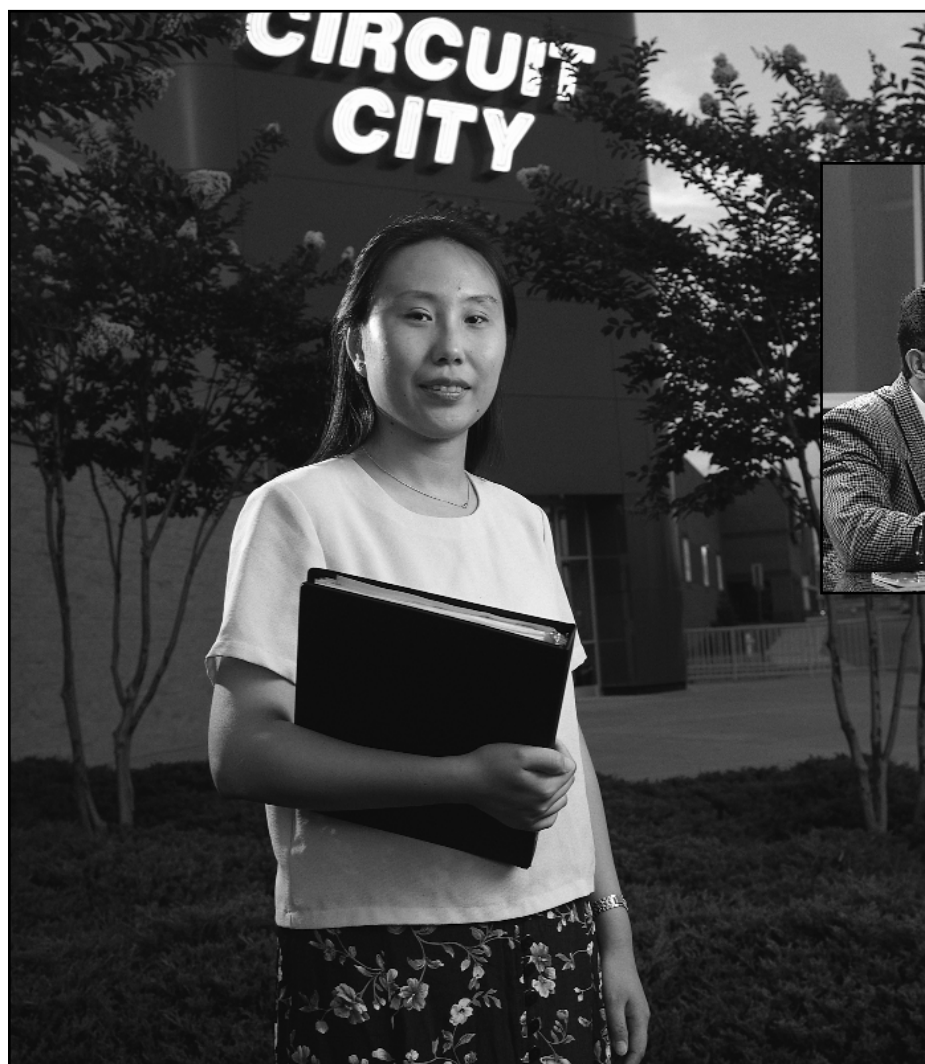


# School of Business

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## Undergraduate Programs and Specializations

Accounting B.S.  
 Business Administration and Management B.S.  
     business administration  
     entrepreneurship and small business  
     international business  
     operations management  
 Economics B.S.  
 Finance B.S.  
     finance  
     financial planning  
     insurance/risk management  
 Human Resource Management/Industrial Relations B.S.  
 Information Systems B.S.  
     client server track  
     decision support technologies track  
     information engineering track  
     network management track  
 Marketing B.S.  
 Real Estate and Urban Land Development B.S.



**Centered in the heart of a metropolitan area, the School of Business and the city of Richmond work as partners in offering students the opportunity to integrate classroom education with real-life experience.**

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Dean and Professor of Economics (2000)  
 B.A. and M.A. Brooklyn College  
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Associate Dean and  
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 Ph.D. 1976 University of Alabama  
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**Walter S. Griggs Jr.**

Associate Dean for Undergraduate Studies and  
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 Ed.D. 1979 College of William and Mary

**Charles J. Gallagher**

Associate Dean for External Affairs and  
 Associate Professor of Economics (1971)  
 B.S. Rider College  
 Ph.D. 1971 West Virginia University

The primary objective of the School of Business is to prepare students for professional careers in business, government, research and education. Under this objective, the School of Business renders service to the business community, engages in and encourages research in business-related fields, provides service to other schools in the university, and contributes to identifying and solving problems related to the university's urban mission.

The general education requirements taken by business students provide a broad knowledge of the liberal arts in general. Major requirements provide business students with an opportunity for extensive study in specific fields.

The school offers degree programs in accounting, business administration and management, economics, finance, human resource management/industrial relations, information systems, marketing, and real estate and urban land development.

Finance majors choose a specialization in finance, insurance/risk management or financial planning. Information

systems majors choose a specialization in client/server, network management, information engineering or decision support technologies. Majors in business administration and management can choose a specialization in business administration, entrepreneurship and small business, international management or operations management.

## Accreditation

The School of Business is accredited by the American Assembly of Collegiate Schools of Business (AACSB) which accredits programs of professional education in business at the collegiate level. The AACSB evaluates curricula, faculty credentials, library facilities, physical plant and equipment, and financial support of the institution.

## Scholarships and awards

In addition to university scholarships, business students may apply and compete for scholarships awarded through the School of Business endowed scholarship funds or through the various School of Business academic programs. Scholarships for School of Business freshmen are administered via the university admissions process. All other scholarships are for continuing students. For more information, contact the School of Business Undergraduate Office, Room 3119.

Several nonmonetary awards are presented in recognition of scholastic achievement and service. These include the Dean's Scholars, the Delta Sigma Pi Scholarship Key, Virginia Society of Certified Public Accountants Award of Achievement, and the "Wall Street Journal" Award. The School of Business Honors Program recognizes outstanding students, faculty and alumni at its annual Honors Program.

## Honorary and professional organizations

VCU's business school seeks to improve the quality of its programs and to provide educational development opportunities for its students through active chapters of honorary and professional organizations.

Beta Gamma Sigma is a national scholarship society founded to encourage and reward scholarship and accomplishment among business students.

The upper 5 percent of the junior class and the upper 10 percent of the senior class are eligible for election into the society.

Beta Alpha Psi, a national accounting honorary society, elects its members on the basis of scholarly achievement in accounting courses; the National Honor Society of Omicron Delta Epsilon recognizes scholarship in economics; and Alpha Mu Alpha is the national honor society in marketing.

Business students are encouraged to participate in student professional organizations such as the Accounting Society; the Association of Information Technology Professionals; Delta Sigma Pi, an international fraternity that contributes to the development of students in all business disciplines; the Financial Management Association; Gamma Iota Sigma, a national fraternity for students interested in insurance; Rho Epsilon, a national fraternity for students interested in real estate; the American Marketing Association; the Society for Advancement of Management; the Society for Human Resource Management; and the Jennings Society for students interested in economics.

## University Honors Program

The University Honors Program provides academic and other opportunities for academically superior students and is open to qualified business students. For a detailed description of qualifications for admission, see Part II of this bulletin.

## Cooperative education and internships

Business students are eligible for the university's Cooperative Education Program. Qualified students placed with an employer will either alternate one semester of full-time study with one semester of full-time work or combine study with part-time work during the same semester. The School of Business also offers internships, allowing advanced students to pursue part-time work assignments with area employers. Students interested in these programs should contact Dr. Charles J. Gallagher, associate dean for external affairs.

## International business

Students interested in international business are encouraged to participate in programs available in the School of Business and in other divisions of the university. The international dimensions of business are discussed in a number of courses required of business students. Additionally, the School of Business offers specialized courses that address specific international topics. A minor in international studies is offered through the College of Humanities and Sciences.

VCU students also can participate in the International Student Exchange Program (ISEP), which allows a student to complete some course work toward a degree while attending a foreign institution. The university also organizes specialized travel and study abroad programs through the Center for International Programs.

## Business Council of the School of Business

The Business Council of the School of Business is composed of leading business executives. The council meets periodically to advise and assist the dean and faculty in the development of the total educational program and to help in the school's continuing efforts to maintain academic excellence.

## Academic policies

School of Business degree programs are organized into two components – the foundation program and the advanced program.

Students admitted to the School of Business as freshmen or sophomores enroll in the foundation program. Continuing students who meet the academic standards are admitted to the advanced program, the majors, at the beginning of their junior year. Transfer applicants also are considered for admission to the foundation and advanced programs.

Acceptance into a major is competitive and based on academic performance. To maintain the quality of its educational programs, the number of students admitted in any semester depends on the resources available to the school. All students admitted to a major must meet a 2.25 cumulative GPA (CGPA) requirement (**the major of information systems requires a**

**cumulative GPA of 2.75 or greater**) and must have completed, prior to enrollment in the advanced program, at least 54 credits in the foundation program or its equivalent. Transfer students also must meet the required CGPA for courses taken at their former institutions. The 54 required credits must include the following courses or their equivalents: ENGL 101-200, MGMT 171, 212, ECON 210-211 and ACCT 203-204.

Applications and information for admission to all undergraduate programs in the School of Business can be obtained from the Office of Admissions, Virginia Commonwealth University, 821 W. Franklin St., Richmond, VA 23284-2526.

## Admission deadlines

Prospective students for the School of Business must follow the application submission dates for the university as stated in Part II of the bulletin.

A student completing the business foundation program must apply for admission to the advanced program by requesting a change of major. Students currently enrolled in degree programs at VCU who seek a change of major to a School of Business program also should file a change of major request. All change of major requests should be done in the School of Business Office of Undergraduate Studies, Room 3119. If approved, the change of major becomes effective at the beginning of the following semester.

## Accelerated program

The School of Business Accelerated Program enables students to earn both a bachelor's and a master's degree in one of the business disciplines within four years. First-semester freshmen with at least a 1270 SAT score and a high school class rank in the upper 15 percentile are eligible to apply for the program. To remain in the program, students must maintain a 3.5 GPA or better.

In addition to saving time and money, students in this program are guaranteed admission to a master's program in the School of Business. Students may apply to the accelerated program through the School of Business Office of Undergraduate Studies, Room 3119.

## Guaranteed admission

VCU students who receive their undergraduate degrees in business are guaranteed admission into a VCU School of Business master's degree program if they rank in the top 15 percent of their high school class with a minimum 3.0 GPA, have a minimum recent SAT score of 1270, and have an undergraduate CGPA of at least 3.5. An on-campus interview is recommended.

## Enrollment in business courses

All VCU students can enroll in freshman and sophomore business courses (all 100-200-level courses in the School of Business or Economics) provided prerequisites are met.

Only juniors, seniors and graduate students admitted to a major field within the university and special students with a bachelor's degree are eligible for enrollment in all upper-division courses (300-400-level courses in the School of Business or Economics). Students without these qualifications may enroll in the following upper-division courses if the prerequisites are met:

- ACCT 305 Tax Planning for Individuals
- FIRE 315 Personal Financial Planning
- FIRE 316 Principles of Real Estate
- FIRE 333 Risk and Insurance
- FIRE 428 Employee Benefit Planning
- FIRE 444 Occupational Safety, Health, and Security
- INFO 358 Structured and Object Programming
- INFO 360 Business Information Systems
- INFO 362 Computer Hardware and Software
- MGMT 301-302 Business Statistics
- MGMT 331 Human Resource Management
- MGMT 421 Small Business Management

## Limitation on total credits earned by non-business majors

The number of credits that nonbusiness majors may accumulate from enrollment in classes offered by the School of Business is limited to a maximum of 25 percent of the total credits required for graduation in their programs. Students who wish to present more than 25 percent of their course work in business and/or economics must be admitted to a major in the School of Business, must complete a minimum of 27 credits from the School of Business advanced program after acceptance into the major, and must meet all graduation requirements of the school. This does not limit the

number of courses in economics for economics majors in the College of Humanities and Sciences.

### Transfer policies

In addition to meeting the general requirements of the university and the School of Business, transfer students who plan to enroll in an undergraduate program in business must comply with the following:

1. Calculation of the CGPA requirement for admittance into the School of Business advanced program is based on grades earned at all institutions attended.
2. Transfer of business and economics courses from two-year institutions is limited to courses offered by the School of Business in the lower division (freshman and sophomore years).
3. Transfer of business and economics courses from institutions offering bachelor's degrees is limited to courses offered at levels no lower than the levels of comparable courses offered by the School of Business.

### Student advising

Every student admitted to a major is assigned a faculty adviser from that major field of study. Students enrolled in the foundation program are assigned advisers to assist them until the foundation program is completed. The advisers assist students in planning course work, becoming familiar with university services, interpreting university rules and procedures, and clarifying career objectives.

While the faculty of the School of Business provides information and advice, the student is ultimately responsible for knowing and satisfying the degree requirements of his or her program. Students should familiarize themselves with curriculum requirements, appropriate sequencing of courses and course prerequisites, and academic regulations covered in Part VI of this bulletin.

### Double majors

A double major fulfills the requirements of two majors concurrently. To earn a degree with a double major, the student must fulfill all the requirements

of the degree programs of which the majors are a part. Students can declare a double major in the School of Business through the change of major process in the Office of Undergraduate Studies. The request for a double major should be approved before the student begins courses in the second major. For a second major in the School of Business, the student must complete all courses required for each major. If more than one course overlaps both majors, the student must complete additional courses to reach a minimum of 24 credits in the second major. The chair of the department in which the second major is offered must approve all second major courses at the time the student declares the double major. Students admitted to the double major are assigned an adviser in each major.

### General requirements for bachelor of science in business

To complete this degree, a minimum of 120 credits is required, with no more than four of those credits in physical education, and no more than another four credits from INFO 160, 161, 162, 163, 165, 166, 168 and 169. The foundation program specifies course work required during the freshman and sophomore years. Students who successfully complete a minimum of 54 credits in the foundation program – including ENGL 101-200, ECON 210-211, MGMT 171, 212, and ACCT 203-204 – meet the course requirements for admission into a major in the School of Business.

The advanced program details the course requirements for students admitted to a major in the school. Candidates for the bachelor's degree in business must complete the 120 credits outlined in the combination of the foundation and advanced programs.

#### Foundation program

	Credits
1. General requirements	21
ECON 210-211 Principles of Economics	
ENGL 101-200 Composition and Rhetoric	
MGMT 171 Mathematical Applications for Business	
MGMT 212 Differential Calculus and Optimization for Business	
SPCH 121 or 321 Effective Speech or Speech for Business and the Professions (Only one of these courses may be used to fulfill degree requirements.)	

2. Restricted electives	21
a. Natural science	
One course with lab from the following:	
BIOL 101 Life Science	
BIOL 102 Science of Heredity	
BIOL/ENVS 103 Environmental Science	
CHEM 101-102 General Chemistry	
CHEM 103 Modern Chemistry	
CHEM 110 Chemistry and Society	
PHYS 101 Foundations of Physics	
PHYS 103 Astronomy	
PHYS 105 Physical Geology	
PHYS 107 Wonders of Technology	
PHYS 201-202 General Physics	
b. Human behavior	
One course from psychology, sociology, or anthropology, except PSYC 214 Applications of Statistics which cannot be taken for degree credits by business majors.	
c. Institutional studies	
One course from the following:	
(Accounting majors must take political science.)	
HIST 101 or 102 Survey of European History	
HIST 103 or 104 Survey of American History	
POLI 103 U.S. Government	
POLI 105 International Relations	
POLI 201 Introduction to Politics	
d. Literature, philosophy, language	
One course from the following:	
ENGL 201 or 202 Western World Literature I and II	
ENGL 203 or 204 British Literature I and II	
ENGL 205 or 206 American Literature I and II	
ENGL 241 Shakespeare's Plays	
PHIL 103 Ancient Greek and Medieval Western Philosophy	
PHIL 104 Modern Western Philosophy	
Any foreign language	
e. Visual and performing arts (minimum of 2 credits)	
One course from the approved list in this bulletin (See "General Education Courses, Recommended for Nonschool of the Arts Majors" in index.)	
f. Additional restricted electives	
Select remainder of 21 credits from any of the other courses listed above in (a) through (e).	
3. Non-School of Business electives	12
(MGMT 302 and a maximum of four credits from the INFO 160 series can be used as non-business electives.)	
4. School of Business foundation core	6
ACCT 203-204 Introduction to Accounting	
5. Business and/or non-business electives	3
Finance majors must take MGMT 302, and accounting majors should consult recommended electives under the accounting major requirements. All School of Business students entering junior-level business and economics courses are expected to have competency in computer-based word processing and spreadsheet skills such as those taught in INFO 160, 161, and 162.	

**Advanced program**

	Credits
1. School of Business advanced core	30
ECON 303 Managerial Economics	
FIRE 311 Financial Management	
INFO 360 Business Information Systems	
MGMT 301 Business Statistics	
MGMT 319 Organizational Behavior	
MGMT 320 Production/Operations Management	
MGMT 325 Organizational Communication	
MGMT 434 Strategic Management	
MRBL 308 Introduction to Marketing	
MRBL 323 Legal Environment of Business	
(Accounting majors must take MRBL 481 in place of MRBL 323)	
2. Major requirements – listed under the major requirement section of each department	27
	57
Total foundation and advanced programs	120

**Minor in general business**

The minor in general business is for nonbusiness majors and consists of the following 21 credits: ECON 203 Introduction to Economics, ACCT 202 Accounting for Non-business Majors, MRBL 308 Introduction to Marketing (prerequisites: ECON 203 and junior standing), FIRE 311 Financial Management (prerequisites: ACCT 202 and junior standing; pre or corequisite: MGMT 301), MGMT 319 Organizational Behavior (prerequisite: junior standing), MRBL 323 Legal Environment of Business (prerequisite: junior standing), and INFO 360 Business Information Systems. A cumulative GPA of 2.0 must be attained in these courses.

**Department of Accounting****Ruth W. Epps**

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B.S. Virginia Union University  
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M.Acc. Virginia Commonwealth University  
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Tondkar, Rasoul H. (1980) Professor  
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B.E. Bangalore University  
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Ph.D. 1990 University of Pittsburgh

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B.S.B.A. University of Arkansas  
M.S.A. University of Arkansas  
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C.P.A.

**Emeriti faculty**

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C.P.A.

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B.S. James Madison University  
M.S. Virginia Commonwealth University

Willis, H. David, Associate Professor Emeritus  
B.S. West Virginia University  
M.Ed. Virginia Polytechnic Institute and State University

The mission of the Department of Accounting at VCU is to prepare students for careers in accounting; to interpret and expand accounting knowledge; and to render service to the profession and communities. The department does so by:

1. providing a learning environment in which students are encouraged to interact with others in identifying and solving accounting and business problems,
2. investigating, developing and sharing knowledge which has the potential for significant influence on accounting, business and education, and
3. interacting with the accounting profession, the business community and the community at large.

The 120-hour undergraduate accounting program is designed to prepare students for entry-level positions in careers related to governmental and industry/manufacturing accounting. This program will not qualify graduates to sit for the CPA examination in Virginia after June 30, 2006. The focus of the undergraduate program is of high quality and professional education at the foundation level with strong emphasis on management control systems, cost analysis and governmental/fund accounting.

**Major requirements**

	Credits
ACCT 303 Intermediate Accounting I	3
ACCT 304 Intermediate Accounting II	3
ACCT 306 Cost Accounting	3
ACCT 307 Accounting Systems	3
ACCT 401 Governmental and Not-for-profit Accounting	3
ACCT 402 Advanced Cost Accounting	3
ACCT 403 Management Control Systems	3
ACCT 405 Tax Accounting	3
Required accounting elective (choose from list)	3

**Accounting electives** (select one course from the following three)

- ACCT 404 Advanced Accounting
- ACCT 406 Auditing
- ACCT 410 Advanced Tax Accounting

### Integrated 150-hour Professional Accounting Program

For those students who desire to enter the field of public accounting and obtain the CPA certificate, the Department of Accounting offers an Integrated 150-hour Professional Program. This integrated program consists of 150 hours whereby the student earns both the bachelor of science and the masters of accountancy degrees with a major in accounting and a concentration in either (1) information systems, (2) finance and auditing or (3) other areas of business. A description of this program is given in the Graduate Bulletin.

### Post-baccalaureate certificate in accounting

This certificate is designed for people who have earned a bachelor's degree in a field other than accounting and wish to continue their education but do not aspire to a master's degree. A complete description of this program is given in the Graduate Bulletin.

## Department of Economics

### Edward L. Millner

Professor and Department Chair (1983)  
B.A. Hampden-Sydney College  
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Beall, Larry G. (1970) Associate Professor and Director,  
Center for International Urban Management  
B.S. State University of New York, Binghamton  
M.A. University of South Carolina  
Ph.D. 1973 Duke University

Bowman, John H. (1981) Professor  
B.S. Ohio State University  
M.A. Ohio State University  
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Davis, Douglas D. (1987) Professor  
B.A. Western Kentucky University  
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Gallagher, Suzanne (1990) Assistant Professor and Director,  
Center for Economic Education, School of Business  
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Harless, David W. (1993) Associate Professor  
B.S. Augustana College  
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Hoffer, George E. (1970) Professor  
B.S. University of Richmond  
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Mitchell, Shannon K. (1990) Associate Professor  
B.S. Ball State University  
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B.A. College of William & Mary  
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B.S. University of Richmond  
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Reilly, Robert J. (1978) Professor  
B.B.A. Wake Forest University  
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Ph.D. 1978 University of Tennessee

Scotese, Carol A. (1997) Assistant Professor  
B.A. Pennsylvania State University  
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Ph.D. 1991 Pennsylvania State University

Stratton, Leslie S. (1997) Assistant Professor  
B.A. Wesleyan University  
Ph.D. 1989 Massachusetts Institute of Technology

Wetzel, James N. (1974) Professor  
B.S. University of Wisconsin  
Ph.D. 1974 University of North Carolina

### Emeriti faculty

Dalton, Amy H., Associate Professor Emerita  
B.A. Westhampton College  
M.A. University of Pennsylvania  
Ph.D. University of Virginia

Ferguson, Clinton S., Associate Professor Emeritus  
B.B.A. University of Chattanooga  
M.S. University of Tennessee

Harrison III, William B., Associate Professor Emeritus  
B.A. University of Richmond  
M.A. University of Richmond  
Ph.D. University of Maryland

Hellmuth, William F., Professor Emeritus  
B.A. Yale University  
Ph.D. Yale University

Moszer, Max, Professor Emeritus  
A.B. University of Pennsylvania  
A.M. University of Pennsylvania  
Ph.D. University of Pennsylvania

Snellings, Eleanor C., Associate Professor Emerita  
A.B. University of North Carolina  
M.A. University of North Carolina  
Ph.D. Duke University

**Economics is the science of human choice, the study of how scarce resources**

are allocated among competing uses to satisfy human wants. Since many choices analyzed are made by or affect business decision-makers, economics is a unique blend of liberal arts and business. Therefore, the Department of Economics offers a major in both the College of Humanities and Sciences and the School of Business. The major in the College of Humanities and Sciences is designed for students who desire the flexibility and breadth that is associated with a liberal arts degree. Students who want to combine training in economics with exposure to the business disciplines should consider the major in the School of Business.

Undergraduate work in economics is excellent preparation for careers in business, government, and teaching and for graduate work in economics and professional schools such as law, public administration, and medicine. Specialization in economics prepares people for careers that emphasize analytical thinking, a broad understanding of the economy and business organizations, and the proper choice of policies by governments and business enterprises. Because of their analytical, quantitative and decision-making skills, students who major in economics are sought for a wide array of positions in management and sales. The specific skills they acquire also provide employment opportunities in large organizations with departments that forecast business conditions and analyze economic data of special interest to the organizations. Federal, state and local governments also offer numerous employment opportunities for economists. The increasingly international focus of many markets also contributes to the demand for economists.

### Major requirements

	Credits
ECON 301 Microeconomic Theory	3
ECON 302 Macroeconomic Theory	3
ECON 307 Money and Banking	3
ECON 489 Senior Seminar in Economics	3
ECON Electives (must be 300 or 400-level courses)	12
MGMT 302 Business Statistics	3

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### Minor in economics

A minor in economics is described in Part VIII, College of Humanities and Sciences.



## Department of Finance, Insurance and Real Estate

### David A. Dubofsky

Professor and Department Chair (1997)  
B.E. City College of New York  
M.B.A. University of Houston  
Ph.D. 1982 University of Washington  
CFA

Baranoff, Etti (1995) Assistant Professor of Finance  
and Insurance  
B.A. Tel-Aviv University  
Ph.D. 1993 University of Texas, Austin  
FLMI

Boykin, James H. (1971) Professor and Alfred L. Blake Chair  
Professor of Real Estate  
B.S. Virginia Polytechnic Institute and State University  
M.Com. University of Richmond  
Ph.D. 1971 American University  
M.A.I., C.R.E.

Daniels, Kenneth N. (1990) Associate Professor of Finance  
B.A. Fairfield University  
M.A. University of Connecticut  
Ph.D. 1990 University of Connecticut

Ferguson, Jerry T. (1965) Professor of Real Estate and Urban  
Land Development  
B.S. Virginia Polytechnic Institute and State University  
M.S. Virginia Polytechnic Institute and State University  
Ph.D. 1978 University of Florida

Hubbard, Elbert W. (1981) Associate Professor of Finance  
B.B.A. University of Cincinnati  
M.B.A. University of Cincinnati  
Ph.D. 1973 University of Cincinnati

McDonald, R. Michael (1977) Associate Professor of Safety  
and Risk Administration  
B.S. and M.S. Central Missouri State University  
Ed.D. 1985 Virginia Polytechnic Institute and State  
University

Miller, E. G. (1973) Associate Professor of Insurance and  
Management Science and Acting Dean  
B.S. University of Alabama  
M.A. University of Alabama  
Ph.D. 1976 University of Alabama  
C.L.U., C.P.C.U.

Murphy, Neil B. (1988) Professor of Finance  
B.S. Bucknell University  
M.S. Bucknell University  
Ph.D. 1968 University of Illinois  
C.C.M.

Myers, Phyllis S. (1982) Associate Professor of Finance and  
Insurance and Director, Insurance Studies Center  
B.B.A. Georgia State University  
M.B.A. University of South Carolina  
Ph.D. 1984 University of South Carolina  
C.L.U., F.L.M.I.

Phillips, Richard A. (1994) Associate Professor of Real Estate  
and Urban Land Development  
B.A. Old Dominion University  
Ph.D. 1981 University of North Carolina

Ramírez, Gabriel G. (1997) Professor of Finance  
B.S. Instituto Tecnológico de Estudios Superiores de  
Monterrey  
M.B.A. Georgia State University  
Ph.D. 1988 Georgia State University  
Salandro, Daniel P. (1989) Associate Professor of Finance  
B.A. St. Vincent College  
M.A. University of Pittsburgh  
Ph.D. 1990 University of Pittsburgh  
Shin, Tai S. (1978) Professor of Finance  
B.A. Oklahoma City University  
M.A. University of Illinois  
Ph.D. 1969 University of Illinois  
Upton, David E. (1987) Professor of Finance  
B.A. University of Connecticut  
M.B.A. University of Connecticut  
Ph.D. 1976 University of North Carolina  
CFA

### Emeriti faculty

Berry, Sam G., Associate Professor Emeritus of Finance  
B.S. Florida State University  
M.B.A. Florida State University  
D.B.A. Florida State University  
Thornton, Jack E., Professor Emeritus of Finance  
B.S. University of North Carolina  
M.S. University of North Carolina  
Ph.D. University of North Carolina

### Finance

The major in finance prepares students for graduate-level study of finance and for careers in corporate finance, the securities industry, banking, financial planning or insurance/risk management. Students choose a concentration in one of three tracks — finance, financial planning or insurance/risk management. (Courses directly related to risk, insurance and employee benefits are approved for 42 Virginia insurance continuing-education credits for insurance agents. Contact the director of insurance studies for further information.) Students in the financial planning track are urged to take modules in the VCU Certificate in Financial Planning Curriculum. With grades of “C” or better in these modules and in the track’s major requirements, students receive the Certificate of Completion, and are eligible to sit for the Certified Financial Planning examination, and eventually earn the Certified Financial Planner designation. Contact the chair of the department for further information.

### Major requirements

	Credits
FIRE 312 Intermediate Financial Management	3
FIRE 314 Investments	3

FIRE 333 Risk and Insurance	3
FIRE 437 Funds Management in Financial Institutions	3
Select one of the three tracks (15 credits)	15
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### 1. Finance track

FIRE 414 Security Analysis and Portfolio Management  
FIRE 416 International Financial Management  
FIRE 417 Cases in Financial Management  
FIRE 455 Options, Futures, and Swaps

#### Approved finance elective:

ACCT 303 Intermediate Accounting I  
ACCT 306 Cost Accounting  
ECON 307 Money and Banking  
ECON 402 Business Cycles and Forecasting  
FIRE 413 Comparative Financial Systems  
FIRE 424 Property and Liability Insurance  
FIRE 426 Life and Health Insurance  
FIRE 429 Real Estate Finance  
FIRE 491 Topics in Finance, Insurance and Real Estate  
FIRE 493 Internship in Finance, Insurance and Real Estate

### 2. Insurance/risk management track

FIRE 424 Property and Liability Insurance  
FIRE 428 Employee Benefit Planning  
Choose two of the following:  
FIRE 426 Life and Health Insurance  
FIRE 430 Social Insurance  
MRBL 432 Insurance Law

#### Approved insurance/risk management elective:

ACCT 305 Tax Planning for Individuals  
ECON 307 Money and Banking  
ECON 421 Government and Business  
FIRE 332 System Safety  
FIRE 334 Incident Investigation and Analysis  
FIRE 413 Comparative Financial Systems  
FIRE 416 International Financial Management  
FIRE 417 Cases in Financial Management  
FIRE 493 Internship in Finance, Insurance and Real Estate  
MGMT 331 Human Resource Management  
MRBL 350 Tort Law

### 3. Financial Planning Track

FIRE 414 Security Analysis and Portfolio Management  
FIRE 426 Life and Health Insurance  
FIRE 428 Employee Benefit Planning  
ACCT 405 Tax Accounting

#### Approved financial planning elective:

ACCT 303 Intermediate Accounting I  
ACCT 410 Advanced Tax Accounting  
ECON 307 Money and Banking  
ECON 402 Business Cycles and Forecasting  
FIRE 416 International Financial Management  
FIRE 417 Cases in Financial Management  
FIRE 424 Property and Liability Insurance  
FIRE 429 Real Estate Finance  
FIRE 430 Social Insurance  
FIRE 432 Insurance Law  
FIRE 455 Options, Futures and Swaps  
FIRE 491 Topics in Business (Finance)

FIRE 492 Independent Study  
 FIRE 493 Internship  
 MRBL 373 Buyer Behavior  
 MRBL 474 Personal Selling and Sales Management  
 MRBL 475 Services Marketing

## Real estate and urban land development

The major in real estate and urban land development prepares students for careers in land development, brokerage, valuation and investment counseling, site analysis and selection, real property management, mortgage lending, and bank trust and corporate real estate departments, as well as other real estate related careers in the public and private sectors.

### Major requirements

	Credits
FIRE 316 Principles of Real Estate	3
FIRE 317 Real Property Management	3
MRBL 326 Real Estate Law	3
FIRE 423 Real Estate Brokerage	
or FIRE 431 Advanced Real Estate Appraisal	3
FIRE 425 Real Estate Appraisal	3
FIRE 429 Real Estate Finance	3
FIRE 437 Funds Management in Financial Institutions or ECON 307 Money and Banking	3
Plus any two of the following five courses:	6
MRBL 310 Information for Marketing Decisions	
FIRE 318 Real Estate Negotiating	
FIRE 423 Real Estate Brokerage	
FIRE 431 Advanced Real Estate Appraisal	
URSP 302 Land Use Capability	

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## Post-baccalaureate certificate in real estate and urban land development

This post-baccalaureate certificate is designed for people who have earned a bachelor's degree in a field other than real estate and urban land development and who wish to continue their education but do not aspire to a master's degree. A complete description of this program is given in the Graduate Bulletin.

## Department of Information Systems

### George M. Kasper

Professor and Department Chair (1996)  
 B.A. State University of New York, Brockport  
 M.B.A. State University of New York, Buffalo  
 Ph.D. 1983 State University of New York, Buffalo

Aiken, Peter H. (1993) Associate Professor  
 B.S. Virginia Commonwealth University  
 M.S. Virginia Commonwealth University  
 Ph.D. 1989 George Mason University  
 Blanks, Edwin E. (1965) Associate Professor and Vice Provost for Academic Administration  
 B.S. Virginia Commonwealth University  
 M.S. 1967 Virginia Commonwealth University  
 C.S.P.  
 Bryson, Noel (Kweku-Muata) (1998) Professor  
 B.S. University of the West Indies  
 M.S. Howard University  
 Ph.D. 1988 University of Maryland  
 Chin, Amita Goyal (1993) Associate Professor  
 B.S. University of Maryland  
 M.S. University of Maryland  
 Ph.D. 1994 University of Maryland  
 Coppins, Richard J. (1978) Associate Professor  
 B.S. Lehigh University  
 M.S. Lehigh University  
 Ph.D. 1975 North Carolina State University  
 Fuhs, F. Paul (1975) Assistant Professor  
 B.S. Spring Hill College  
 M.S. Purdue University  
 B.D. Boston College  
 Ph.D. 1977 University of Massachusetts  
 Gasen, Jean B. (1978) Associate Professor  
 B.A. Case Western Reserve University  
 M.A. Western Michigan University  
 Ph.D. 1978 University of Wisconsin, Madison  
 Hubona, Geoffrey S. (1996) Assistant Professor  
 B.A. University of Virginia  
 M.B.A. George Mason University  
 M.A. University of South Florida, Tampa  
 Ph.D. 1993 University of South Florida, Tampa  
 Lee, Allen S. (1998) Professor  
 B.S. Cornell University  
 M.S. University of California, Berkeley  
 Ph.D. 1982 Massachusetts Institute of Technology  
 Mann, Robert I. (1988) Associate Professor  
 B.A. Stanislaus State University  
 M.B.A. California State University  
 M.S. Southern Methodist University  
 Ph.D. 1981 Arizona State University  
 Moreno Jr., Valter  
 B.E.E. Aeronautics Technology Institute, Brazil  
 M.S. Fluminense Federal University, Brazil  
 M.Lic. Rio de Janeiro State University  
 Ngwenyama, Ojelanki (1997) Associate Professor  
 B.S. Roosevelt University  
 M.B.A. Syracuse University  
 Ph.D. 1988 State University of New York  
 Redmond, Richard T. (1983) Associate Professor  
 B.S. Shippensburg State College  
 D.B.A. 1983 Kent State University  
 Saunders, Gerald A. (1999) Instructor  
 B.S. Virginia Commonwealth University  
 M.S. Virginia Commonwealth University  
 Sutherland, John W. (1980) Professor  
 B.S. University of California, Los Angeles  
 M.S. University of California, Los Angeles  
 Ph.D. 1967 University of California, Los Angeles

Thomas, Manoj A. (1999) Instructor  
 B.E. (Electronics and Communication) Bharathiar University  
 M.B.A. 1999 Virginia Commonwealth University  
 Weistroffer, H. Roland (1983) Associate Professor  
 M.A. Duke University  
 D.Sc. 1976 Free University, Berlin  
 Wynne, A. James (1974) Associate Professor  
 B.S. Rensselaer Polytechnic Institute  
 M.S. Virginia Commonwealth University  
 Ph.D. 1978 University of Nebraska, Lincoln  
 Yap, Alexander (1999) Assistant Professor  
 B.A. University of the Philippines  
 M.A. Williams College  
 M.B.A. Exeter University, England  
 Ph.D. 1999 Copenhagen Business School, Denmark  
 Yoon, Youngohc (1995) Associate Professor  
 B.S. Chung-Ang University  
 M.S. University of Pittsburgh  
 Ph.D. 1989 University of Texas, Arlington

### Emeriti faculty

Hodge, Bartow, Professor Emeritus  
 B.S. Louisiana State University  
 M.S. Louisiana State University  
 Ph.D. Louisiana State University  
 Morecroft, Josephine F., Associate Professor Emerita  
 B.A. Hunter College  
 M.B.A. Union College, New York  
 Ph.D. Union College, New York  
 Riehl, Julian William, Associate Professor Emeritus  
 B.S. University of Omaha  
 M.A. University of Maryland  
 D.B.A. George Washington University

The major in information systems is designed to prepare students for professional careers in the discipline of information systems/technology. Through required and elective courses, students will be prepared for positions as programmers, systems analysts, software analysts and network analysts. The department also offers courses in information systems to meet the needs of students in other curricula offered by the university and of those who are seeking to enhance their knowledge of information systems.

Students admitted to the bachelor of science program as well as students admitted to the certificate program in information systems must meet a 2.75 cumulative GPA requirement in addition to the other School of Business requirements.

The major requires students to take six required courses and then choose a three-course track.

**Major requirements**

	Credits
A. Major core (18 credits)	
INFO 358 Structured and Object Programming	3
INFO 361 Systems Analysis and Design	3
INFO 362 Computer Hardware and Software	3
INFO 464 Database Systems	3
INFO 465 Projects in Information Systems	3
INFO 470 Local Area Networks	3
B. Select one of the following tracks	9
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**1. Client/server**

The client/server track is for students interested in the development of object-oriented, graphic user interface (GUI) based, distributed applications. It emphasizes the client and server aspects of the implementation environment.

INFO 359 Advanced Structured and Object Programming	3
INFO 462 Java Support for E-Business	3
Approved elective	3

**2. Network management**

The network management track is for students interested in the implementation and management of local and wide area networks. It emphasizes the network aspects of the implementation environment.

INFO 359 Advanced Structured and Object Programming	3
INFO 467 Distributed Data Communications and Teleprocessing	3
Approved elective	3

**3. Information engineering**

The information engineering track focuses on the development of comprehensive approaches to information systems development as a part of organizational strategic planning. Consequently, prior approval by track coordinator is required and it is offered only to students who are able to demonstrate significant work experience in one or more of the following areas:

- analyzing/designing systems.
- planning/managing information technology development projects.
- planning/managing organizations from a strategic perspective.

INFO 461 Information Systems Planning	3
INFO 463 Re-engineering Technology in Organizations	3
INFO 468 Information Engineering	3

**SEE TRACK ADVISER FOR APPROVAL FORM****4. Decision support technologies**

The decision support technologies track may be selected only by professionals already working in information systems, who have already demonstrated their programming proficiency on the job, and wish to extend their education into the support of complex decision-making and control processes in organizations. Prior approval by adviser is required.

INFO 469 Information and Decision Systems in Organizations	3
Choose two of the following:	

MGMT 302 Business Statistics II	3
MGMT 339 Management Science	3
MGMT 439 Quality I	3
MGMT 440 Forecasting Methods and Process	3

**SEE TRACK ADVISER FOR APPROVAL FORM****Approved electives (for tracks 1 and 2)**

INFO 363 COBOL Programming	3
INFO 366 Computerware Analysis	3
INFO 461 Information Systems Planning	3
INFO 462 Java Support for E-Business	3
INFO 467 Distributed Data Processing and Telecommunications	3
INFO 469 Information and Decision Systems in Organizations	3
INFO 491 Topics in Information Systems	3
INFO 492 Independent Study in Information Systems	3
INFO 493 Internship in Information Systems	3

Note: INFO 258 (Visual Basic Programming) is a prerequisite for INFO 358. INFO 258 cannot be used as an elective within the major of information systems, but may be used in the Business Foundation Program under the category "Business and/or non-Business Electives."

Note: All majors in information systems are encouraged to take additional work in the area of decision sciences (MGMT 302, MGMT 339, MGMT 439, MGMT 440).

**Post-baccalaureate certificate in information systems**

The post-baccalaureate certificate in information systems is designed for students who have earned a baccalaureate degree in a field other than information systems and who desire to continue their education beyond the undergraduate-level but do not aspire to a master's degree. A complete description of the program is given in the Graduate Bulletin. For information relating to the certificate program, contact the Associate Dean for Graduate Studies, School of Business, 1015 Floyd Ave., Richmond, VA 23284-4000.

**Department of Management****R. Jon Ackley**

Associate Professor of Management and Acting Chair (1979)

B.S. and M.Ed. Bloomsburg State College  
Ed.D. 1979 Utah State University

Andrews, Robert L. (1978) Associate Professor of Decision Sciences  
B.S. University of Alabama  
M.A. University of Alabama

M.S. Virginia Polytechnic Institute and State University  
Ph.D. 1971 Virginia Polytechnic Institute and State University

Barker, Randolph T. (1989) Associate Professor of Management

B.A. Florida State University  
M.A. Florida State University  
Ph.D. 1976 Florida State University

Byles, Charles M. (1990) Associate Professor of Management  
B.S. University of West Indies

M.B.A. University of Toledo  
D.B.A. 1986 Kent State University

Byrd, Donna G. (1979) Instructor of Management Science  
B.A. College of William and Mary

M.B.A. 1978 Virginia Commonwealth University

Canavos, George C. (1975) Professor of Management Science  
B.S. Virginia Polytechnic Institute and State University

M.S. Virginia Polytechnic Institute and State University  
Ph.D. 1971 Virginia Polytechnic Institute and State University

Gilbreath, Glenn H. (1971) Professor of Management Science  
B.S. University of Alabama

M.A. University of Alabama

Ph.D. 1971 University of Alabama

Gray, George R. (1977) Associate Professor of Human Resource Management and Industrial Relations

B.S. Auburn University

M.B.A. University of Scranton

Ph.D. University of Alabama

J.D. 1987 University of Richmond

Humphrey, Ronald H. (1996) Associate Professor of Management

B.A. University of Chicago

Ph.D. 1984 University of Michigan

Johnson, Iris W. (1982) Associate Professor of Management

B.S. Longwood College

M.S. Virginia Commonwealth University

Ed.D. 1981 Virginia Polytechnic Institute and State University

Kurtulus, Ibrahim S. (1981) Associate Professor of Management

B.S. Middle East Technical University

M.B.A. University of Michigan

Ph.D. 1978 University of North Carolina

McDaniel, Michael A. (1998) Assistant Professor of Management

B.A. University of Delaware

M.A. Loyola University of Chicago

M.A. George Washington University

Ph.D. 1986 George Washington University

Miller, Don M. (1980) Associate Professor of Decision Sciences  
B.S. Millsaps College

Ph.D. 1970 Virginia Polytechnic Institute and State University

Miller, Marianne (1993) Associate Professor of Management

B.A. Ohio State University

M.S. Purdue University

Ph.D. 1992 University of Oregon

Minor, Elliott D. (1987) Associate Professor of Operations Management

B.A. University of Virginia

Ph.D. 1989 University of South Carolina

Myers, Donald W. (1982) Professor of Human Resource Management  
 B.A. California State University, Sacramento  
 M.B.A. Georgia State University  
 D.B.A. 1972 Georgia State University

Narula, Subhash C. (1983) Professor of Management Science  
 B.E. University of Delhi, India  
 M.S. University of Iowa  
 Ph.D. 1971 University of Iowa

Pearce, C. Glenn (1975) Associate Professor of Management  
 B.B.A. University of Georgia  
 M.A. New York University  
 Ph.D. 1974 Georgia State University

Pitts, Michael W. (1981) Associate Professor of Strategic Management  
 B.A. University of North Carolina, Charlotte  
 M.B.A. Winthrop University  
 D.B.A. 1984 University of Tennessee

Rimler, George Warren (1970) Professor of Management  
 B.S.M.E. Polytechnic Institute of Brooklyn  
 M.B.A. Georgia State University  
 D.B.A. 1970 Georgia State University

Seers, Anson (1996) Professor of Management  
 B.S. and M.S. University of Illinois  
 Ph.D. University of Cincinnati

Sleeth, Randall G. (1975) Associate Professor of Management  
 B.A. University of New Hampshire  
 Ph.D. 1977 University of Massachusetts

Smith, Charles H. (1982) Associate Professor of Management Science  
 B.S. Alderson-Broaddus College  
 M.A. University of Michigan  
 M.B.A. College of William & Mary  
 Ph.D. 1975 University of Maryland

Spinelli, Michael A. (1969) Associate Professor of Management Science  
 B.A. West Virginia University  
 Ph.D. 1971 West Virginia University

Stith-Willis, Annie M. (1987) Instructor of Management Science  
 B.S. Virginia Commonwealth University  
 M.A. 1984 Virginia Commonwealth University  
 Ph.D. 1999 Virginia Commonwealth University

Trumble, Robert R. (1988) Professor of Management and Director, Virginia Labor Studies Center  
 B.A. Hamline University  
 M.A. University of Minnesota  
 Ph.D. 1971 University of Minnesota

Williams, Larry J. (1997) Professor of Management  
 B.S. Purdue University  
 M.S. Purdue University  
 Ph.D. 1988 Indiana University

Williams, Margaret L. (1997) Associate Professor of Management  
 B.S. Heidelberg College  
 M.S. Indiana University, Purdue  
 M.B.A. Indiana University, Bloomington  
 Ph.D. 1989 Indiana University, Bloomington

Wood Jr., D. Robley (1979) Professor of Management  
 B.A. Emory and Henry College  
 M.S. University of Tennessee  
 D.B.A. 1977 University of Tennessee

#### Emeriti faculty

Brown, Darrell R., Professor Emeritus of Management  
 B.S. University of Kansas  
 M.B.A. University of New Mexico  
 Ph.D. University of Oregon

Bushway, Collin, Professor Emeritus of Management  
 M.B.A. University of Chicago  
 D.B.A. George Washington University

DeGenaro, Guy J., Professor Emeritus of Management  
 B.S. University of Maryland  
 M.B.A. Indiana University  
 Ph.D. University of Florida

Hunt, Eugene H., Professor Emeritus of Management  
 B.S. Virginia Commonwealth University  
 M.S. Virginia Commonwealth University  
 Ed.D. University of Maryland

Jackson, J. Howard, Professor Emeritus of Business Education and Office Administration  
 B.S. University of Tennessee  
 M.S. University of Tennessee  
 Ph.D. Ohio State University  
 C.P.S.

Johnston, Russell A., Professor Emeritus of Management  
 B.S. Virginia Commonwealth University  
 M.S. Virginia Commonwealth University  
 Ed.D. University of Kentucky

Johnston, Wallace R., Associate Professor Emeritus of Management and Human Resources Management  
 B.B.A. George Washington University  
 M.B.A. George Washington University  
 D.B.A. George Washington University

Lambert, John D., Professor Emeritus of Management  
 B.S. Virginia Commonwealth University  
 M.S. Virginia Polytechnic Institute and State University  
 Ph.D. University of Michigan

Tucker, Woodie L., Professor Emeritus of Management  
 B.S. University of Virginia  
 M.Ed. University of Pittsburgh  
 Ph.D. University of Pittsburgh

Umberger, Paul M., Assistant Professor Emeritus of Management Science  
 B.S. Virginia Polytechnic Institute and State University  
 M.S. Virginia Polytechnic Institute and State University

The Department of Management offers the major in business administration and management with tracks in business administration, entrepreneurship and small business management, international management, and operations management; and the major in human resource management/industrial relations.

#### Business administration and management

The major in business administration and management consists of four tracks that allow students to either pursue general study in business and management or to specialize in selected areas

of management. The track in business administration provides a broad-based study of management and other business disciplines. The choices in the business administration track allow students flexibility in developing a program of study leading to a variety of entry-level positions in private and public organizations.

The entrepreneurship and small business track enables students to develop skills in working with small firms and eventually starting small firms of their own as well as gain a knowledge of entrepreneurial concepts useful for a variety of positions in organizations of any size.

The track in international management allows students to pursue an interest in the global nature of today's business world. Students enrolled in this track are encouraged to take advantage of a variety of opportunities available for international study within the university and abroad.

In the operations management track, students study the planning, production and delivery of products and services. Managing the operations of a business encompasses all activities that allow the organization to deliver services and products that customers want. These activities include the management of supplier relationships, purchasing, materials management, scheduling and forecasting. Operations positions are found in all organizations, including banking and financial services, manufacturing and government.

#### Major requirements

	Credits
A. Major core (9 credits)	
MGMT 302 Business Statistics II	3
MGMT 331 Human Resource Management	3
MGMT 334 Managing Dynamic Organizations	3
B. Select one of the following tracks (18 credits)	18
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#### 1. Business Administration

MGMT 339 Management Science  
 MGMT 418 International Management  
 MGMT 489 Managerial Applications and Skills Development  
 Approved finance or insurance elective (choose one)  
 Approved systems or marketing elective (choose one)  
 Approved management elective (choose one)

#### Approved finance and insurance electives

FIRE 312 Intermediate Financial Management  
 FIRE 314 Investments

FIRE 316 Principles of Real Estate  
FIRE 333 Risk and Insurance

#### Approved systems and marketing electives

INFO 361 Systems Analysis  
MGMT 346 Technology and the Management Process  
MRBL 376 Dynamics of Retail Management  
MRBL 475 Services Marketing

#### Approved management electives

MGMT 421 Small Business Management  
MGMT 420 Seminar in Industrial Relations  
MGMT 433 Compensation Management  
MGMT 439 Quality I  
MGMT 491 Topics in Business  
MGMT 493 Internship

## 2. Entrepreneurship and small business management

FIRE 313 Finance for Small and Entrepreneurial Enterprise  
MGMT 421 Small Business Management  
MGMT 422 Managing the Family Firm  
MGMT 436 New Venture Initiation  
Approved electives (choose two) — subject to prerequisite sites listed in course descriptions  
ACCT 306 Cost Accounting  
FIRE 316 Principles of Real Estate  
FIRE 333 Risk and Insurance  
MGMT 346 Technology and the Management Process  
MRBL 372 Product Development and Management  
MRBL 376 Dynamics of Retail Management  
MGMT 385 Production/Operations Management II  
MRBL 475 Services Marketing  
MGMT 489 Managerial Applications and Skills Development

## 3. International management\*

ECON 329 International Economics  
MGMT 329 Introduction to Intercultural Communication  
MGMT 418 International Management  
Approved electives (choose three) — subject to prerequisite sites listed in course descriptions  
MGMT 446 International Human Resource Management  
MGMT 489 Management Applications and Skill Development  
FIRE 416 International Financial Management  
MRBL 378 International Marketing  
MRBL 478 International Marketing Strategy  
MGMT 491 Topics in Business: Summer Study Abroad (see Schedule of Classes for courses offered)  
Consortium International University courses\*\*  
International electives\*\*

\* Students are encouraged to consider: a minor in International and Area Studies, or Foreign Languages; the semester abroad program through the Consortium International University; and courses outside the School of Business (approved by adviser or department chair).

\*\* Approved by adviser and department chair

## 4. Operations management

MGMT 339 Management Science  
MGMT 385 Production and Operations Management II  
MGMT 386 Logistics and Physical Distribution  
MGMT 439 Quality I  
Approved electives (choose two) — subject to prerequisite sites listed in course descriptions  
ACCT 306 Cost Accounting  
FIRE 444 Occupational Safety, Health and Security  
INFO 361 Systems Analysis  
MGMT 420 Seminar in Industrial Relations  
MGMT 440 Forecasting Methods and Process  
MGMT 441 Production Planning and Control Systems  
MGMT 483 Purchasing and Materials Management  
MGMT 489 Management Applications and Skills Development  
MGMT 491 Topics in Business (approved by adviser)  
PSYC 310 Industrial Psychology

## Human resource management/industrial relations

The major in human resource management/industrial relations gives students a broad overview of the educational and application aspects of human resource management/industrial relations. Students in this program pursue an in-depth study of a variety of topical areas, including human resource management, labor and employment relations law, compensation management and employee benefits. Students are encouraged to broaden their knowledge base by taking electives in industrial psychology. After completing this program, students are prepared to enter the public and private sectors in compensation, employee benefits, incentive awards programs and human resources.

#### Major requirements

	Credits
MGMT 331 Human Resource Management	3
MGMT 420 Seminar in Industrial Relations	3
MGMT 433 Compensation Management	3
MGMT 435 Strategic Human Resource Management	3
MGMT 446 International Human Resource Management	3
MRBL 427 Labor and Employment Relations Law	3
Approved electives (Choose three of the following courses.)	9
(Students planning to attend graduate school should complete MGMT 302 as either an approved or free elective.)	

#### Choose three of the following approved electives:

ADLT 403 Human Resource Development  
ECON 431 Labor Economics

FIRE 428 Employee Benefit Planning  
FIRE 444 Occupational Safety, Health and Security  
MGMT 302 Business Statistics II  
MGMT 334 Managing Dynamic Organizations  
MGMT 447 Human Resource Information Systems  
MGMT 489 Managerial Applications and Skills Development

## Minor in human resource management

#### Required courses:

MGMT 331 Human Resource Management  
MGMT 433 Compensation Management  
MGMT 435 Strategic Human Resource Management  
MGMT 446 International Human Resource Management

#### Select two courses from the following list:

ADLT 403 Human Resource Development  
FIRE 428 Employee Benefit Planning  
FIRE 444 Occupational Safety, Health and Security  
MGMT 420 Seminar in Industrial Relations  
MGMT 447 Human Resource Information Systems  
MRBL 427 Labor and Employment Law

## Post-baccalaureate certificate in human resource management

This certificate is designed to increase the knowledge and skills of human resource practitioners, to prepare individuals who are seeking employment in the field and to educate persons who desire more knowledge about human resource management. A complete description of this program is given in the Graduate Bulletin.

## Department of Marketing and Business Law

#### Pamela Kiecker

Professor of Marketing and  
Department Chair (1994)  
B.A. Carleton College  
M.B.A. Mankato State University  
Ph.D. 1988 University of Colorado, Boulder

Cowles, Deborah L. (1986) Associate Professor of Marketing  
B.A. Ohio Wesleyan University  
M.A. University of Texas, Austin  
Ph.D. 1987 Arizona State University  
Daughtrey Jr., William H. (1972) Professor of Business Law  
B.S. Hampden-Sydney College  
J.D. 1958 University of Richmond  
Franzak, Frank J. (1986) Associate Professor of Marketing  
B.S. Virginia Polytechnic Institute and State University  
M.B.A. University of Maryland  
Ph.D. 1984 University of Maryland  
Griggs Jr., Walter S. (1971) Associate Professor of Business Law and Associate Dean for Undergraduate Studies  
M.H. University of Richmond  
J.D. University of Richmond  
Ed.D. 1979 College of William and Mary

- Little, Michael W. (1983) Associate Professor of Marketing  
B.S. Western Michigan University  
M.S. and Ph.D. 1978 Michigan State University
- McDermott, Dennis R. (1979) Associate Professor of Marketing  
B.B.A. University of Toledo  
M.B.A. and Ph.D. 1973 Ohio State University
- Rasnic, Carol D. (1980) Professor of Business Law  
B.A. University of Kentucky  
J.D. 1965 Vanderbilt University
- Smith Jr., Alfred L. (1974) Assistant Professor of Business Law  
B.A. Virginia Military Institute  
J.D. University of Richmond  
L.L.M. 1974 New York University
- Urban, David J. (1989) Associate Professor of Marketing  
B.S. University of Virginia  
M.A. and Ph.D. 1985 University of Michigan
- Wijnholds, Heiko D. (1979) Associate Professor of Marketing  
B.Com. University of Pretoria  
M.Com. and D.Com. 1970 University of South Africa
- Wood, Van R. (1994) Professor of Marketing and Philip Morris Chair of International Business  
B.A. and M.B.A. University of Washington  
Ph.D. 1982 University of Oregon

#### **Emeritus faculty**

- Welzel, Alvin K., Associate Professor Emeritus of Marketing  
B.S. Rutgers University  
M.S. New York University

#### **Marketing**

The major in marketing endows the student with a broad working knowledge of contemporary marketing philosophy and practice. Students can choose from a variety of courses that most closely meet their interests and career aspirations. Graduates of this program will find career opportunities in marketing management, advertising, sales, marketing research, public relations, and retailing, among others.

#### **Major requirements**

	Credits
MRBL 310 Information for Marketing Decisions	3
MRBL 378 International Marketing	3
MRBL 476 Marketing Management	3
Select six courses from the following list:	18

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- MRBL 371 Integrated Marketing Communications  
MRBL 372 Product Development and Management  
MRBL 373 Buyer Behavior  
MRBL 376 Dynamics of Retail Management  
MRBL 474 Personal Selling and Sales Management  
MRBL 475 Services Marketing  
MRBL 478 International Marketing Strategy  
MRBL 491 Topics in Marketing and Business Law (Marketing Topic)

- MRBL 492 Independent Study in Marketing and Business Law  
MRBL 493 Internship in Marketing and Business Law

#### **Minor in marketing**

The minor in marketing is for business and non-business majors. It recognizes the cross-functional nature of today's business environment and the growing importance of the customer orientation in all organizations, public and private, for-profit and not-for-profit, domestic and global. For non-business majors in particular, the minor in marketing responds to the need for marketing knowledge and skills in a wide variety of organizations and potential career fields. It consists of 18 credit hours of 300- and 400-level marketing courses as follows: MRBL 308 Introduction to Marketing, MRBL 476 Marketing Management, and 12 credits of approved electives with at least three of these 12 credits at the 400-level. All prerequisites to courses must be met. Additional information regarding the minor in marketing can be obtained from the School of Business Office of Undergraduate Studies, Room 3119, or from the chair of the Department of Marketing and Business Law.

#### **Post-baccalaureate certificate in marketing**

This certificate is designed for students who have earned a baccalaureate degree in a field other than marketing who now desire an extensive, current knowledge of marketing. Successful completion of the post-baccalaureate certificate in marketing recognizes the cross-functional nature of today's business environment and the growing importance of the customer orientation in all organizations, public and private, for-profit and not-for-profit, domestic and global. A complete description of the program is given in the Graduate Bulletin.

#### **Preparation for the Study of Law**

##### **Carol D. Rasnic**

Department of Marketing and Business Law, Adviser

##### **Husain Mustafa**

Department of Political Science, Adviser

##### **James L. Hague**

Department of Criminal Justice, Adviser

Few law schools list specific undergraduate courses as prerequisites for admission. Therefore, the student considering law school may major in virtually any department in the College of Humanities and Sciences or the School of Business. However, students are encouraged to obtain a broad liberal arts background with emphasis on the social sciences and English. The advisers to pre-law students maintain continual contact with law school admissions offices and will assist any interested student who has questions about curriculum, financial assistance, application procedures, or the Law School Admissions Test (LSAT).

#### **Graduate programs in business and economics**

The School of Business offers graduate work leading to the degrees of master of business administration, master of science in business, master of arts in economics, master of accountancy, master of taxation, and the doctor of philosophy in business. These programs prepare candidates for responsible participation in business, industry, government and education. Details of these programs are presented in the Graduate Bulletin, which can be received by writing to the Associate Dean for Graduate Studies, School of Business, Virginia Commonwealth University, 1015 Floyd Ave., Richmond, VA 23284-4000.

#### **External affairs**

##### **Charles J. Gallagher**

Associate Dean for External Affairs

The associate dean for external affairs has primary responsibility for coordinating all School of Business activities that reach out into the community. This office monitors the overall direction of the activities of the Virginia Council on Economic Education; the noncredit aspects of real estate, insurance, and small business programs; and other external activities not directly related to academic degree programs. The director of development assists the School of Business Alumni Association with its activities and programs and coordinates all fund-raising projects for the school.

### **Alfred L. Blake Chair of Real Estate**

This chair is endowed by the Virginia Realtors Foundation. It provides financial assistance to the endowed chairholder for research and support services. Its purpose is to promote an understanding of real estate operations by offering both credit and noncredit courses.

### **Employment Support Institute (ESI)**

ESI is a research, demonstration, and training center providing technology enhanced decision support and team facilitation. Its mission is "helping people make better decisions about employment options and policies."

ESI creates opportunities for community participants, legislators, advocates, faculty, students, and employers to learn and use decision support technologies related to social service policies. ESI has developed applications focused on options and policies affecting persons with disabilities.

ESI provides decision support to help people navigate employment support benefits and to improve related policy and legislation.

### **Enterprise Systems Institute**

The mission of the Enterprise Systems Institute (ESI) is to promote the free exchange of knowledge about enterprise-wide information systems. A primary goal is to improve competitiveness by helping organizations establish corporate cultures that internalize the learning and values needed to fully realize the benefits from investing in enterprise-wide systems. ESI is a joint initiative among Virginia's Center for Innovative Technology (CIT) and Virginia Commonwealth University's Department of Information Systems and its Information Systems Research Institute. Corporate sponsors of ESI include IBM, J.D. Edwards, LeClair Ryan, Philip Morris USA, Reynolds Metals Company, SAP America, Greater Richmond Technology Council, PeopleSoft and others.

### **Information Systems Research Institute**

The Information Systems Research Institute (ISRI) is the professional outreach office of the Department of

Information Systems. Recognized as a model center, ISRI provides programs that integrate teaching, applied research and professional workforce development. Under the supervision of faculty, students apply knowledge and skills learned in the classroom, gaining on-the-job experience and earning financial support. ISRI connects students and faculty to business and government to leverage experiences and talents so that each remains competitive in the rapidly changing world of information systems and technology.

### **Insurance Studies Center**

This program educates and promotes awareness in the areas of risk management, insurance, financial services, and employee benefits. It also offers academic and professional programs in conjunction with area insurance professionals.

### **Interactive Marketing Institute (IMI)**

IMI is a research and training center for marketing studies housed in the Department of Marketing and Business Law. The institute provides a comprehensive set of marketing services for faculty, students, businesses, and not-for-profit agencies, which includes a full range of research services, presentations, continuing professional educational seminars, and workshops. Most notably, the IMI sponsors the Direct Marketing Certification, a comprehensive, modular program of instruction and practice for marketing professionals.

### **Small Business Development Program**

Participating students in this program consult, counsel, and research problems of a particular business. Students are encouraged to design extensive plans to implement their solutions.

### **Virginia Council on Economic Education**

The council encourages and promotes a better understanding of economics and the American economy among Virginia school administrators, teachers, community leaders and the general public. VCU is one of nine statewide centers on economic education.

### **Virginia Family Business Forum**

The forum addresses many of the unique problems encountered by family firms. It provides family business owners and key personnel with valuable information and timely educational programs in a practical, usable format in an atmosphere that allows for interaction with similar firms.

The forum offers three seminars per year featuring leading experts and family business owners who address current issues of importance to family firms. It provides business owners the opportunity to benefit from the experiences of their peers.

The forum also holds quarterly educational breakfast meetings and publishes a quarterly newsletter.

### **Virginia Labor Studies Center**

The Virginia Labor Studies Center is committed to developing leadership for the improvement of labor-management relationships in the commonwealth. The center endeavors to develop an improved public perception of labor-management relations and improve productivity through more advanced labor-management relations.

The planning and administering of its various outreach efforts are done through work with both the labor and management community as well as other interested organizations and individuals. The center assists both labor and management in developing research and education programs.

### **Virginia Real Estate Center**

The center provides information on current market trends to educators, real estate professionals and the general public. The center seeks innovative ideas of improving future real estate markets.

## **Course descriptions**

### **Courses in accounting (ACCT)**

#### **ACCT 202 Accounting for Non-Business Majors.**

Semester course; 3 lecture hours. 3 credits. The course is open only to non-business students. A nontechnical introduction to the principles of financial and managerial accounting with emphasis on the use and interpretation of financial reports, managerial planning and control. The course is for the individual who seeks a basic knowledge of accounting and its uses. It is designed for the user of accounting information rather than the preparer. This course cannot be substituted for ACCT 203, 204, or 205.

**ACCT 203-204 Introduction to Accounting.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MATH 141 or equivalent. Theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation, and uses of accounting information.

**ACCT 205 Introductory Accounting Survey.**

Semester course; 3 lecture hours. 3 credits. Restricted to students in the post-baccalaureate certificate in accounting program. An accelerated course covering theoretical and technical facets of financial and managerial accounting for business. Accumulation, analysis, interpretation, and uses of accounting information. May not be counted toward any of the B.S. programs offered by the School of Business.

**ACCT 291 Topics in Accounting.**

Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**ACCT 303-304 Intermediate Accounting I and II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: INFO 160, 161, 162 or equivalent competency, ACCT 204, and junior standing. Grade of "C" or higher in ACCT 303 is required to take ACCT 304. Theoretical standards and procedures for accumulating and reporting financial information about business. Classification, valuation, and timing involved in determination of income and asset/equity measurement.

**ACCT 305 Tax Planning for Individuals.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 203. Not open to accounting majors. A general course in tax accounting concepts and procedures for students with a minimum of previous work in accounting. Emphasis is on aspects of taxation affecting the individual: federal and state income, estate, inheritance, gift, excise, and payroll taxes; fundamentals of tax planning. Credit will not be given for both this course and ACCT 405.

**ACCT 306 Cost Accounting.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 160, 161, 162 or equivalent competency, ACCT 204, and junior standing. Cost accumulation for inventory pricing and income determination. Cost behavior concepts for planning and control. Job order and process cost systems, standard costs, budgets, and special topics in relevant costs for managerial decisions.

**ACCT 307 Accounting Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 160, 161, 162 or equivalent competency, ACCT 204, and junior standing. Examines design and evaluation of manual and computerized accounting information systems. Emphasis on the system of internal controls and the impact of computers on those controls.

**ACCT 401 Governmental and Not-For-Profit Accounting.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 303-304, grade of "C" or higher in ACCT 304, and junior

standing. The role of accounting in the management of resources entrusted to government and nonprofit entities, including accounting and reporting standards. Accounting in municipalities and nonprofit entities such as hospitals, charitable and health organizations, and colleges and universities.

**ACCT 402 Advanced Cost Accounting.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 306. An advanced conceptual cost/managerial course designed to familiarize students with the more complex aspects of cost/managerial accounting concepts including process costing, standard costing, activity-based costing, Just-in-Time inventory systems, enterprise resource planning and issues relating to the relative strengths and limitations of managerial accounting.

**ACCT 403 Management Control Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: ACCT 307. An advanced conceptual management control systems course designed to expose students to the theoretical and conceptual foundations of management control systems (MCS) and to integrate accounting into the managerial decision/control process. Uses a predominantly case-oriented approach. While primary emphasis will be on integrating accounting into the management control process, significant attention also will be devoted to the behavioral issues involved in management control system design and implementation. Students also will receive hands-on experience in structuring and formulating control systems in an Enterprise Resource Planning system environment.

**ACCT 404 Advanced Accounting.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Grade of "C" or higher in ACCT 304 and junior standing. Financial accounting for complex business relationships, including home office-branch accounting, business combinations, consolidated financial statements, partnerships, and governmental funds.

**ACCT 405 Tax Accounting.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 161, 162 or equivalent competency, ACCT 204, and junior standing. Income tax legislation and the concept of taxable income; federal income tax law applicable to individuals.

**ACCT 406 Auditing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 301, grade of "C" or higher in ACCT 304 and ACCT 307, and junior standing. A study of the conceptual, theoretical, and practical procedures applicable to auditing - both external and internal. Primary emphasis is placed upon the theory of audit evidence; the objectives, techniques, and procedures for financial and operational audit reports.

**ACCT 407 Advanced Auditing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 406 and junior standing. An in-depth analysis of advanced topics in auditing. Topics include statements on auditing standards, unaudited statements, advanced statistical sampling applications, and auditing in computer

environments. Emphasis is given to preparing students for the auditing section of the CPA examination.

**ACCT 410 Advanced Tax Accounting.**

3 lecture hours. 3 credits. Prerequisites: ACCT 405 and junior standing. Complex tax problems of the trust, partnership, and corporation. Particular emphasis is given to tax planning.

**ACCT 411 Accounting Opinions and Standards.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Grade of "C" or higher in ACCT 304 and junior standing. A technical course concerned with pronouncements of the public accounting profession. The course objective is to familiarize students with present and proposed accounting opinions and standards.

**ACCT 481-482/MRBL 481-482 Law for Accountants I and II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: Senior accounting major or permission of instructor. Provides detailed examination of laws that are of particular importance to accountants, along with ethical considerations and social and political influences. First semester: contracts, sales, agency, commercial paper, secured transactions, and bankruptcy. Second semester: security regulations, antitrust, partnerships, corporations, suretyship, insurance, wills, and trusts. Students may not receive degree credit for MRBL 481-482 and for MRBL 323, 324.

**ACCT 491 Topics in Accounting.**

Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

**ACCT 492 Independent Study in Accounting.**

Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**ACCT 493 Internship in Accounting.**

Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.

**Courses in economics (ECON)****ECON 101 Introduction to Political Economy.**

Semester course; 3 lecture hours. 3 credits. Seminar on the development of critical thought and economic analysis of policy issues. Focus is on how policy choices affect society and the individual, the economic methodology that guides policy choices, and the institutional and political environments within which policy is derived. Issues cover a broad range of topics including environmental issues,



tax policy, inflation expectations, unemployment, foreign trade, and the effectiveness of fiscal and monetary policies.

#### **ECON 203 Introduction to Economics.**

Semester course; 3 lecture hours. 3 credits. A survey of economic principles, institutions, and problems. The course is designed to provide basic economic understanding for students who do not expect to major in economics or in the School of Business. No degree credit for economics and business majors. (Students may not receive credit for ECON 203, ECON 210 and ECON 211.)

#### **ECON 205 The Economics of Product Development and Markets.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 141. An introduction to some of the fundamental economic concepts necessary to effectively operate in today's marketplace. Basic elements of microeconomics, net present value analysis, and market strategy will be covered in class. The goal is to provide students with a better understanding of how to approach business problems and of proven problem solving techniques. Appropriate for engineering and non-engineering students. (Students may not receive credit for ECON 203 or ECON 210.)

#### **ECON 210-211 Principles of Economics.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MATH 001 or satisfactory score on the Mathematics Placement Test. A course designed to acquaint the student with a theoretical and practical understanding of the economic institutions and problems of the American economy. First semester: Microeconomics. Second semester: Macroeconomics.

#### **ECON 291 Topics in Economics.**

Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

#### **ECON 301 Microeconomic Theory.**

3 lecture hours. 3 credits. Prerequisites: ECON 210-211 and junior standing. Analysis of the principles that govern production, exchange, and consumption of goods and services. Topics include demand analysis, production and cost theory, price and output determination, theory of markets, and distribution theory.

#### **ECON 302 Macroeconomic Theory.**

3 lecture hours. 3 credits. Prerequisites: ECON 210-211 and junior standing. A general survey of national income analysis and macroeconomic theory. Detailed study of public policies affecting price levels, employment, economic growth, and the balance of payments.

#### **ECON 303 Managerial Economics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211, MGMT 212 or MATH 200, and junior standing. Application of tools of economic analysis to allocation problems in profit and nonprofit organizations. Models for evaluating revenue, production, cost, and pricing will be

presented. Emphasis on developing decision rules for turning data into information for solving problems. Students may not receive credit for ECON 203, ECON 210 or ECON 211.

#### **ECON 305 Public Finance - State and Local.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210, or ECON 203, and junior standing. An economic analysis of state and local government budgeting, revenue sources, and expenditures. Students may not receive credit for ECON 203, ECON 210 or ECON 211.

#### **ECON 306 Public Finance - Federal.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210, or ECON 203, and junior standing. An economic analysis of the fiscal decision process, revenue sources, and expenditures at the federal level.

#### **ECON 307 Money and Banking.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211, or ECON 203, and junior standing. A study of money, financial markets, and the financial structure with emphasis on commercial banks and the Federal Reserve System. Relationships between economic activity and money supply are introduced.

#### **ECON 313 Economics of Transportation.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210, or ECON 203, and junior standing. An economic analysis of the transportation industry with special emphasis on regulation, public policy, and urban transportation.

#### **ECON 315/AFAM 315 Economic Development.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210, or ECON 203, and junior standing. Introduction to the process of economic development. Surveys development theory and experiences of underdeveloped countries of Africa, Asia, Latin America and the Caribbean, and of developed countries. Explores obstacles to development and policies and tools for stimulating economic development.

#### **ECON 321/URSP 321 Urban Economics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210, or ECON 203, and junior standing. An introduction to urban economics, with an emphasis on the economics of agglomeration and the role of externalities in the urban economy. Economic analysis of the provision of urban public services and urban public financing, especially in politically fragmented areas.

#### **ECON 325 Environmental Economics.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. The application of economic analysis to externalities such as air and water pollution, pesticide control, land use planning and other environmental issues. The role of cost/benefit analysis in the decision-making process is developed. Efficiency and equity issues are evaluated.

#### **ECON 329 International Economics.**

3 lecture hours. 3 credits. Offered: II. Prerequisites: ECON 210-211 and junior standing. An analysis of economic and political influences on exports and imports, balance of payments, foreign investment, exchange rates, and international monetary systems.

#### **ECON 401 Introduction to Econometrics.**

3 lecture hours. 3 credits. Prerequisites: ECON 210-211, MGMT 301 or STAT 210, and junior standing. Sources and uses of economic data; includes the application of statistical methods and regression analysis to time series and cross-section data to test hypotheses of micro- and macroeconomics.

#### **ECON 402 Business Cycles and Forecasting.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211 and junior standing. An examination of repetitive variations in business activity. The measurement and analysis of economic fluctuations and how they affect the business environment. Stresses modern forecasting techniques.

#### **ECON 403 Introduction to Mathematical Economics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 212 or MATH 200, ECON 210-211, and junior standing. The application of mathematical techniques to economic theory and economic models.

#### **ECON 419/HIST 333 History of Economic Thought.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211 and junior standing. A survey of the ideas of major economic contributors to modern economic thought. Theories of value, growth, and distribution from the 18th through the 20th centuries will be presented.

#### **ECON 421 Government and Business.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211 and junior standing. The application of economic analysis to the behavior of business, industry, and government regulation. Topics include the causes and exercise of monopoly power, antitrust enforcement, public utilities, and industry studies.

#### **ECON 431 Labor Economics.**

3 lecture hours. 3 credits. Prerequisites: ECON 210-211 and junior standing. Analysis of labor markets and institutions to gain an understanding of the process of wage and employment determination. Both historic and current topics are included.

#### **ECON 489 Senior Seminar in Economics.**

3 lecture hours. 3 credits. Prerequisites: ECON 301 and 302 or permission of instructor. Papers on current research of enrolled students, faculty, and guests. Analysis of economic theory and problems on advanced-level.

#### **ECON 491 Topics in Economics.**

Semester course; variable credit. Maximum of three credits per topics course; maximum total of six credits for all topics courses. Prerequisite: Junior standing. An in-depth study of a selected economic topic, to be announced in advance.

#### **ECON 492 Independent Study in Economics.**

Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as an economics major, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in depth or contained in the regular curriculum.

**ECON 493 Internship in Economics.**

Semester course; the student is expected to work at the site 15-20 hours per week. 3 credits. Prerequisites: Junior standing; a minimum of 3.0 GPA in economics courses; at least 15 economics credits; and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during registration for semester of credit. The internship is designed to give students practical experience in an appropriate supervised environment in the public or private sector.

**Courses in finance, insurance and real estate (FIRE)****FIRE 291 Topics in Finance, Insurance and Real Estate.**

Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**FIRE 311 Financial Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ACCT 204 (or ACCT 202 for non-business majors) and junior standing. Pre or corequisite: MGMT 301. Principles of optimal financial policy in the procurement and management of wealth by profit-seeking enterprises; the application of theory to financial decisions involving cash flow, capital structure, and capital budgeting.

**FIRE 312 Intermediate Financial Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 302, FIRE 311, and junior standing. Advanced topics in financial management with emphasis on the theoretical bases for the valuation of the firm.

**FIRE 313 Financial Management for Small Business.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311 and junior standing. This course emphasizes financial management needs for entrepreneurs or persons who expect to be employed in closely held corporations.

**FIRE 314 Investments.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 301 and FIRE 311, or permission of chair, and junior standing. An analysis of the market for long-term corporate securities. Emphasis is given to the valuation of bonds, common stocks, options, and convertible securities and portfolio concepts. Designed to provide an understanding of the functioning of an efficient market.

**FIRE 315 Personal Financial Planning.**

Semester course; 3 lecture hours. 3 credits. Designed to assist households and those providing financial services and advice to households in making complex financial decisions. Units include income and expenditure, credit, borrowing, banking, savings, insurance, home buying, investment, and estate planning.

**FIRE 316 Principles of Real Estate.**

Semester course; 3 lecture hours. 3 credits. Principles and practices of real estate development, financing, brokerage, appraisal, legal instruments, and governmental land use influences.

**FIRE 317 Real Property Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Real property economics and planning, marketing, and management of leased properties.

**FIRE 318 Real Estate Negotiating.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Introduces principles and techniques of negotiating in the marketing and financing of real estate.

**FIRE 326/MRBL 326 Real Estate Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 323 or equivalent, junior standing, or permission of instructor. Legal fundamentals of real estate including contracts, concepts of title, title examination, easements, conveyances, liens, and recording statutes.

**FIRE 330 Regulatory Aspects of Safety and Risk Control.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Examines political, scientific and social concepts of risk that influence the regulation of certain societal hazards and threats. Includes a survey of federal and state laws, regulations and standards that impact upon employment, the environment, industrial security, consumer protection, and occupational safety and health.

**FIRE 332 System Safety.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Addresses the concepts and practices of system safety; included are basic system concepts, application of system safety techniques, qualitative and quantitative applications such as fault-free, failure-mode-and-effects, MORT, and cost-benefit analyses.

**FIRE 333 Risk and Insurance.**

Semester course; 3 lecture hours. 3 credits. Nature of risk; insurance and other risk handling methods; examination of basic life, health, property, and liability principles and coverages.

**FIRE 334 Incident Investigation and Analysis.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Reviews various conceptual and analytical models used in accident/incident investigation strategies and reporting systems, report formats, data collection methods, causal inferences, problem identification, and data analysis; in-depth case studies and epidemiological reviews of recent events will be emphasized.

**FIRE 413 Comparative Financial Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311 and junior standing. An analysis of the structure and functioning of financial systems in different parts of the world. Emphasis is on the evolution of such systems in relation to the U.S. financial system. Different regions of the world may be studied in different semesters.

**FIRE 414 Security Analysis and Portfolio Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 302, FIRE 314, and junior standing. A detailed analysis of stocks and bonds as well as options and futures.

Emphasis is on models for portfolio selection, revision, and performance evaluation.

**FIRE 416 International Financial Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311 and junior standing. Financial management of business in an international environment. Emphasis on tools and techniques to prepare financial managers of multinational firms to effectively respond to the challenges of the international environment.

**FIRE 417 Cases in Financial Management.**

3 lecture hours. 3 credits. Pre or corequisite: FIRE 312 and junior standing. Cases involving financial decisions for various forms of business enterprises.

**FIRE 423 Real Estate Brokerage.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: FIRE 316 and junior standing, or permission of instructor. Considers administrative principles and practices of real estate brokerage, financial control and marketing of real property.

**FIRE 424 Property and Liability Insurance.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 333, or permission of instructor, and junior standing. Property and liability risk identification and measurement. Major commercial line coverages including fire, marine, automobile, general liability, worker's compensation, fidelity, and surety bonds.

**FIRE 425 Real Estate Appraisal.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing or permission of instructor. Designed for persons who have completed a course in principles of real estate or its equivalent, or have experience in the real estate field. Topics include neighborhood and site analysis using cost, market, and income approaches.

**FIRE 426 Life and Health Insurance.**

3 lecture hours. 3 credits. Prerequisite: Junior standing. The function, nature, and uses of life and health insurance and annuities; operational aspects of life insurance companies. Full-time students who pass this course can receive credit for the CLU HS323 examination from the American College. See instructor for details.

**FIRE 428 Employee Benefit Planning.**

Semester course; 3 lecture hours. 3 credits. Management of group life, health, disability, and retirement plans. New developments in employee benefits, plan design, administration, cost, funding, regulation, and tax considerations.

**FIRE 429 Real Estate Finance.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing or permission of instructor. Instruments, techniques, and institutions of real estate finance; the mortgage market; financing process; mortgage risk analysis; creative financing; emphasis on policies and procedures used in financing residential and commercial properties.

**FIRE 430 Social Insurance.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Societal and individual financial problems encountered as the result of disability, unemployment, aging, and death. Discusses solutions through governmental and private techniques.

**FIRE 431 Advanced Real Estate Appraisal.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 425 and junior standing or permission of instructor. Provides a comprehensive study of the principles and concepts underlying the income approach to investment property appraisal and the mathematics of yield capitalization.

**FIRE 432/MRBL 432 Insurance Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. The legal concepts and doctrines applicable to insurance. Fundamental legal aspects of life, health, property, and liability insurance.

**FIRE 437 Funds Management in Financial Institutions.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 311 and junior standing. Funds management techniques for selected financial institutions including investment companies (mutual funds), life and casualty insurers, savings and loans, mutual savings banks, commercial banks, pension funds.

**FIRE 444/MGMT 444 Occupational Safety, Health and Security.**

Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health and security. Causes of workplace health hazard exposures, accidents, and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health, and workplace security programs are studied to facilitate understanding and application in the workplace.

**FIRE 455 Options, Futures, and Swaps.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: FIRE 312, or FIRE 314, and junior standing. Analysis and valuation of speculative securities and markets, including options, futures, and swaps with emphasis on their use for hedging and speculative purposes. Major valuation models and term structure models are discussed with applications to problems in finance considered.

**FIRE 491 Topics in Finance, Insurance and Real Estate.**

Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

**FIRE 492 Independent Study in Finance, Insurance and Real Estate.**

Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**FIRE 493 Internship in Finance, Insurance, and Real Estate.**

Semester course; 3 credits. Prerequisites: Senior standing with a major in finance (either the finance or insurance track) or real estate, a minimum GPA of 2.8, and permission of the Department of Finance, Insurance and Real Estate chair or director of the insurance or real estate program. Involves students in a meaningful experience in finance, insurance or real estate. Intention to enroll must be indicated to the chair or appropriate program director.

**Courses in information systems (INFO)****INFO 160 Introduction to Windows and the Internet.**

Five-week course; 1 lecture hour. 1 credit. Familiarizes students with basic computer concepts and introduces them to the microcomputer environment and the Internet. Topics include an introduction to hardware and software, accessing the Internet and the use of Web browsers as well as hands-on experience with a windows-based microcomputer system and the Internet. This course requires no prior knowledge of computers, and it provides the necessary foundation for introductory application courses. Students may not receive degree credit for both CMSC 128 and INFO 160.

**INFO 161 Introduction to Microcomputer-Based Word Processing Packages.**

Five-week course; 1 lecture hour. 1 credit. Prerequisites: INFO 160 or equivalent knowledge. Introduces students to fundamental use of microcomputer-based word processors. Topics include document preparation and modification, tab sets and indentation, bullets and lists, and table formats. The course will help students prepare documents and papers that other VCU course work may require. Students may not receive degree credit for both CMSC 128 and INFO 161.

**INFO 162 Introduction to Microcomputer-Based Spreadsheet Packages.**

Five-week course; 1 lecture hour. 1 credit. Prerequisite: INFO 160 or equivalent knowledge. Introduces students to fundamentals of spreadsheet processing on the microcomputer. Topics include the entering of text, numbers and formulas, formatting, moving, copying, recalculation, graphing, retrieving, saving and printing. The course will help students prepare financial analyses and products other VCU course work may require. Students may not receive degree credit for both CMSC 128 and INFO 162.

**INFO 163 Web Page Design and Introduction to HTML.**

Five week course; 1 lecture hour. 1 credit. Prerequisites: INFO 160, INFO 161 or equivalent knowledge. Introduces students to Web page design and construction using HTML and scripting languages. Topics include Web page creation, hypertext links, tables and frames. The course will provide hands-on experience in creating Web pages and making them accessible from the World Wide Web. Students may not receive credit for both CMSC 128 and INFO 163.

**INFO 165 Intermediate Microcomputer-Based Spreadsheet Packages.**

Five-week course; 1 lecture hour. 1 credit. Prerequisite: INFO

162 or equivalent. Familiarizes students with the creation and use of macros, advanced formulas, statistical functions and lists. Designed for those students with some prior experience with computer-based spreadsheet packages. Students may not receive degree credit for both CMSC 128 and INFO 165.

**INFO 166 Introduction to Microcomputer-Based Database Packages.**

Five-week course; 1 lecture hour. 1 credit. Prerequisite: INFO 160 or equivalent knowledge. Introduces students to the fundamental use of a microcomputer-based database management system package. Topics include creating and editing tables and forms, sorting and filtering data and generating reports and mailing lists. Designed for those students not majoring in information systems. Students may not receive degree credit for both CMSC 128 and INFO 166.

**INFO 168 Introduction to Microcomputer-Based Presentation Packages.**

Five-week course; 1 lecture hour. 1 credit. Prerequisite: INFO 160 or equivalent knowledge. Familiarizes students with the fundamental use of a microcomputer-based presentation package. Topics include creating and editing presentations, creating and modifying drawing objects and adding clip art. The course will help students prepare presentations and products other VCU course work may require.

**INFO 169 Multimedia Presentations.**

Five-week course; 1 lecture hour. 1 credit. Prerequisite: INFO 168 or equivalent knowledge. Familiarizes students with the fundamental use of multimedia to enhance presentations. Topics include adding animation, creating templates, linking to other resources as well as audio and video. The course will help students to prepare more effective and professional presentations.

**INFO 258 Visual Basic Programming.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: INFO 160 or equivalent. Introduces students to Visual Basic programming in the Windows environment. Concepts of structured and Object Oriented programming are introduced.

**INFO 291 Topics in Information Systems.**

Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**INFO 358 Structured and Object Programming.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 258 or equivalent. Pre or corequisite: INFO 362. Introduction to computer programming using C++ language, including classes and data types, logic constructs, file operations, object building, algorithms and program development, and program testing.

**INFO 359 Advanced Structured and Object Programming.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 358 and junior standing. An advanced programming course using C++ and Java, giving special attention to techniques for program and object design and the evaluation and selection of data structures and algorithms.

**INFO 360 Business Information Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 160, INFO 161, INFO 162, or equivalent knowledge and sophomore standing. Provides an understanding of the importance of computer-based information in the success of the firm. Emphasis is on the role of information systems within each of the functional areas of business. Major concepts include data management, decision support, and management information systems.

**INFO 361 Systems Analysis and Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 360 and junior standing. Examines the concepts, tools, and techniques used to develop and support computer-based information systems. Systems planning, analysis, design, and implementation are covered. Behavioral and model building aspects of systems development are emphasized throughout.

**INFO 362 Computer Hardware and Software.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisite: INFO 258 or equivalent. Principles of computer hardware and software architecture, organization, and operation. Basic concepts are introduced via assembly language programming.

**INFO 363 COBOL Programming.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 258, or INFO 358 or equivalent, or permission of instructor, and junior standing. Introduction to the basic concepts of computer program design using the COBOL programming language, including data structures, fundamental operations on data structures, and algorithmic structures.

**INFO 366 Computerware Analysis.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 362 and junior standing. Surveys the performance characteristics of representative computer and related software systems, of communications systems, and of peripheral equipment that may be considered in systems design and for installation planning.

**INFO 461 Information Systems Planning.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 361, and junior standing. Concentrated study of planning methods and techniques required for defining, planning, integrating and implementing information technology projects consistent with the organizational strategic plan and mission.

**INFO 462 Java Support for E-Business.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 359, INFO 464 and junior standing. Focuses on applying Java GUI components and Java database connectivity to the construction of Windows and Internet applications and applets. Enterprise Server side JavaBeans, Servlets and XML also are treated as part of the support of E-Business.

**INFO 463 Reengineering Technology in Organizations.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisites: INFO 461, permission of the instructor, and junior standing. A survey of legacy system reengineering technologies in which the student becomes familiar with a variety of tools used in practice and has the opportunity to develop applications using these tools under supervision. Selection of technologies is determined each semester.

**INFO 464 Database Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 358, INFO 361, and junior standing. Designed to prepare students for development of systems involving databases and database management.

**INFO 465 Projects in Information Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 361, INFO 464, and junior standing. The student's behavioral and technical skills developed in INFO 361 and INFO 464 are challenged by participating in a team systems development project. Appropriate computer assisted software engineering (CASE) tools are used throughout the project, from requirement specification to implementation and testing.

**INFO 466 Applications Programming.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 363 and junior standing. Covers development of typical data processing programs in COBOL. Includes job control language, debugging, random access files, and other subjects necessary for the implementation of applications programs.

**INFO 467 Distributed Data Processing and Telecommunications.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 361 and 362 or equivalent; junior standing. Technology and concepts of telecommunications and distributed processing, including managerial concerns and interests, hardware, systems design, and operation factors.

**INFO 468 Information Engineering.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 461, INFO 463 and junior standing. A study of information engineering as a model-based, data-centric approach to integrating organizational strategic planning with enterprise information systems development. Involves readings, group discussion, and case studies.

**INFO 469 Information and Decision Systems in Organizations.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 464 or permission of instructor, and junior standing. The ways in which information and decision system technologies affect the management of complex organizations. Emphasis on the impact of computer-aided decision and control processes on planning, financial, production, marketing, and other subsystems.

**INFO 470 Local Area Networks.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 362 or permission of instructor, and junior standing. Provides an introduction into design, implementation, and management of Local Area Networks (LAN's) and the integration of LAN's into wide-area corporate enterprise networks. A case-study orientation is used throughout to emphasize design options in practical situations.

**INFO 491 Topics in Information Systems.**

Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

**INFO 492 Independent Study in Information Systems.**

Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**INFO 493 Internship in Information Systems.**

Semester course; 3 credits. Prerequisites: 3.2 GPA in major; concurrent or past enrollment in INFO 470 and INFO 465 and permission of director of ISRI. Intention to enroll must be indicated prior to or during advance registration of the semester of credit. Involves students in a meaningful experience in a setting appropriate to the major.

**Courses in management (MGMT)**

**(Including business administration, entrepreneurship, international business and operations)**

**MGMT 121 The Business Environment.**

Semester course; 3 lecture hours. 3 credits. Not open to juniors and seniors in the School of Business. Concepts and issues in contemporary business.

**MGMT 171 Mathematical Applications for Business.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: INFO 162 or basic spreadsheet knowledge and MATH 141 or equivalent. (Equivalency may be validated by a satisfactory score on the VCU Mathematics Placement Test.) Formulation and solution of problems using a spreadsheet and algebra, mathematics of finance, basic probability, creation of decision alternatives in the face of uncertainty. A spreadsheet will be used throughout as a calculation and graphing tool.

**MGMT 212 Differential Calculus and Optimization for Business.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 171. Univariate and bivariate differential calculus and optimization of algebraic functions that model business phenomena. A spreadsheet will be used as a calculation tool.

**MGMT 291 Topics in Management.**

Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**MGMT 301-302 Business Statistics.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisites: MGMT 212. Statistical methods employed in the collection and analysis of business and economic data and applications in decision-making. First semester: statistical thinking, concepts of variability, process studies, data collection, descriptive measures, probability, and introduction to statistical inference. Second semester: continuation of statistical inference, regression, and correlation analysis with emphasis on problem formulation and interpretation. Students may not receive degree credit for both MGMT 301 and STAT 210.

**MGMT 319 Organizational Behavior.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Introduction to the determinants and consequences of human behavior and task performance in an organizational setting. Topics include motivation, job design, group development, organizational design, communication, leadership, and change.

**MGMT 320 Production/Operations Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 301, MGMT 319, and junior standing. Discipline of management and the management process within the operations of an organization. Planning and controlling of operations through decision analysis, forecasting, aggregate planning, inventory management, and quality management.

**MGMT 325 Organizational Communication.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGL 101-200 and junior standing. A study of writing for interpersonal, group, and organizational communication, including the preparation of standard business documents.

**MGMT 327/ENGL 327 Business and Technical Report Writing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior standing; ENGL 200. Development of critical writing skills used in business, science, technology, and government, including instructions, descriptions, process explanations, reports, manuals, and proposals. The course will include such topics as communication theory, technical style, illustrations, formats for proposals, reports, and manuals.

**MGMT 329 Introduction to Intercultural Communication.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. An introduction to the basic concepts, principles, and skills for improving verbal and nonverbal communication with persons from different cultures. Using a cultural general approach, topics discussed include the concept of culture, barriers to intercultural communication, verbal communication process, and nonverbal communication aspects. Appropriate for business and non-business majors.

**MGMT 331 Human Resource Management.**

Semester course; 3 lecture hours. 3 credits. Basic problems of employment, selection, and placement; employee rating systems of a diverse workforce, and management of diversity through recognition of employee uniqueness and positive contributions of various cultures to the organization culture; wage levels and methods; job studies and descriptions; training methods and programs.

**MGMT 334 Managing Dynamic Organizations.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 319 and junior standing. Applies macro organization theory to organization design. The design of structure and process to improve effectiveness. Relationships between technology and structure; strategy and environment; power and politics; culture and organization; and growth, decline and revival.

**MGMT 339 Management Science.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 301 and junior standing. Concepts and techniques of management science as they apply to solving business problems, with a focus on applications. Includes linear programming, transportation method, PERT/CPM, queuing models, and simulation.

**MGMT 346 Technology and the Management Process.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior standing. Study of the impact of information technology (IT) on the managerial process, workgroups and communication. Specific topics include IT applications for information workers, nontraditional work environments, environmental ergonomics, security and electronic monitoring of employees, identification and selection of end-user IT, and technology and organizational change.

**MGMT 385 Production/Operations Management II.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisites: MGMT 320 or permission of the instructor, and junior standing. Analyzes operations in organizations through consideration of product and process design, location, layout, job design, work measurement, productivity, scheduling, and maintenance.

**MGMT 386 Logistics and Physical Distribution.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisites: MGMT 320 or permission of the instructor, and junior standing. Introduction to the logistics function and its analysis. Topics include the logistics environment, facility design and location, production scheduling, transportation and distribution analysis. Emphasis is on decision analysis and its management implications.

**MGMT 418 International Management.**

3 lecture hours. 3 credits. Offered: II. Prerequisite: Junior standing. Management attitudes and concepts of other nations, cultures, or geographic regions compared with the United States.

**MGMT 420 Seminar in Industrial Relations.**

3 lecture hours. 3 credits. Prerequisites: MGMT 331, or permission of instructor, and junior standing. Managerial decision-making in labor management relationships; the collective bargaining process and the administration of labor agreements; the impact of public policy and labor legislation.

**MGMT 421 Small Business Management.**

Semester course; 3 lecture hours. 3 credits. The importance, problems, and requirements of small businesses; establishing policies for prices, promotion, control, and credit; regulations, taxes, records, and record keeping.

**MGMT 422 Managing the Family Firm.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 421 or permission of instructor, and junior standing. Students are expected to develop specific strategies and approaches to enhance the effectiveness of the family firm. Designed for members of family firms as well as those who will be working in or providing goods or services for family enterprises. Topics include succession strategies; management and strategic planning; ownership issues; taxes-transfer, gift, and

estate; professionalizing the family firm; boards of directors in the family firm, family business growth, psychological issues, change and conflict in the family business; family relations; women in the family firm; the younger generation; consulting and education for family business; family business in society; global and ethnicity issues in family business; culture and values.

**MGMT 427/MRBL 427 Labor and Employment Relations Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 323, or permission of instructor, and junior standing. A survey of legislation and court and administrative body decisions affecting the employer/employee relationship.

**MGMT 433 Compensation Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 331 and junior standing. The methods and techniques of obtaining job descriptions, job characteristics and measuring scales, job rating, and the awarding of wage increments.

**MGMT 434 Strategic Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in a School of Business major and completion of all School of Business core courses. Integrative course to analyze policy issues at the overall management-level, involving functional areas such as production, finance, and marketing, in context with the economic, political, and social environment.

**MGMT 435 Strategic Human Resource Management.**

3 lecture hours. 3 credits. Prerequisites: MGMT 331, or permission of instructor, and junior standing. A critical study of selected problems in human resource management.

**MGMT 436 New Venture Initiation.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 421, or permission of instructor, and junior standing. Students engage in the development of a comprehensive business plan. Various strategies for success are explored and factors in entrepreneurial competency are discussed.

**MGMT 439 Quality I.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 301, or STAT 212 and permission of instructor, and junior standing. Quality concepts and tools with a focus on the use of statistical thinking in leading organizations; collection and use of data to direct actions for improvement; introduction to analytic studies; the role of process stability; statistical tools for assessing stability and improving processes.

**MGMT 440 Forecasting Methods and Process.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 302, or equivalent, and junior standing. An application-oriented presentation of forecasting process and forecasting methods to support planning and decision making. Statistical forecasting methods are emphasized, including exponential smoothing, decomposition, and regression. Also includes experience with computer software.

**MGMT 441 Production Planning and Control Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 320, MGMT 339, and junior standing. Production planning and control systems, focusing on manufacturing firms. Topics covered include forecasting, statistical inventory control, material requirements planning, and aggregate production planning.

**MGMT 444/FIRE 444 Occupational Safety, Health and Security.**

Semester course; 3 lecture hours. 3 credits. Covers the principles and practices, and regulatory dimensions of occupational safety, health and security. Causes of workplace health hazard exposures, accidents, and domestic and international industrial violence are studied with an emphasis on prevention. Characteristics of effective occupational safety, health, and workplace security programs are studied to facilitate understanding and application in the workplace.

**MGMT 446 International Human Resource Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331. Covers the application of human resource management activities in an international environment. Similarities and differences in domestic methods are highlighted to aid understanding. Contemporary practices in the selection, development, compensation, and maintenance of expatriates, impatriates, repatriates, host country nationals, and third-country nationals are studied. Regulatory and cultural dimensions of countries are examined.

**MGMT 447 Human Resource Information Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MGMT 331 and INFO 360 or permission of instructor. Covers contemporary human resource information software used in the primary activities of human resource management involving recruitment, selection, performance appraisal, employee benefits, pay administration, safety and health, human resource development, job analysis, human resource planning, and job structuring. Emphasis is on introducing the software and practical application through hands-on experience in the computer laboratory.

**MGMT 483 Purchasing and Materials Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 320, or permission of the instructor, and junior standing. An application oriented course dealing with effective management of the supply function in an organization. Current management trends toward world class competitiveness, elimination of waste, total quality (in purchasing management), MRP, and reverse marketing are among the topics covered in this course.

**MGMT 489 Managerial Applications and Skills Development.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 319, MGMT 320 and senior standing or permission of instructor. Application, testing, and critical analysis of management theories, concepts, and skills. Team building and organizational culture assessment.

**MGMT 491 Topics in Management.**

Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance.

**MGMT 492 Independent Study in Management.**

Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum.

**MGMT 493 Internship in Management.**

Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.

**Courses in marketing and business law (MRBL)****MRBL 291 Topics in Marketing and Business Law.**

Variable credit. Maximum of three credits per topic. Prerequisite: Permission of instructor. An in-depth study of selected business topics. Graded as pass/fail at the option of the department.

**MRBL 308 Introduction to Marketing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211 (or ECON 203 for non-business majors) and junior standing. An introduction to the activities involving the exchange of goods, services, and ideas for the satisfaction of human wants. Marketing is examined as it relates to the other functions of the organization, to consumers, and to society.

**MRBL 310 Information for Marketing Decisions.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MGMT 301, MRBL 308, and junior standing. Students receive an overview of the marketing research process. The course includes coverage of primary research, secondary data sources, and marketing information systems. Students learn to apply research findings to marketing decisions.

**MRBL 323 Legal Environment of Business.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Basic legal concepts applicable to business, including the legal aspects of operating a business, contracts, employment relationships, sales, bailments, and commercial paper, along with ethical considerations and social and political influences. Students may not receive degree credit for both MRBL 323 and MRBL 481.

**MRBL 324 Legal Aspects of the Management Process.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 323, or permission of instructor, and junior standing. Legal aspects of partnerships and corporations; management

rights, powers, and responsibilities. Students may not receive degree credit for both MRBL 324 and MRBL 482.

**MRBL 326/FIRE 326 Real Estate Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 323 or equivalent; junior standing or permission of instructor. Legal fundamentals of real estate including contracts, concepts of title, title examination, easements, conveyances, liens, and recording statutes.

**MRBL 350 Tort Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. Basic concepts of tort law with emphasis on intentional torts, negligence, causation, proximate cause, strict liability, nuisance, tortious interference with contract rights, misrepresentation, defamation, and privacy.

**MRBL 371 Integrated Marketing Communications.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 308, or permission of chair, and junior standing. Overviews the various steps in the development of an integrated marketing communications program, including advertising, public relations, sales promotion, personal selling and direct marketing. Special emphasis is placed on the role of new technologies and interactive media in this context.

**MRBL 372 Product Development and Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ECON 210-211, MRBL 308, and junior standing. Study of price theory and policy relevant to goods and services. Introduction to basic product strategy, focusing on new product development, management of existing products, and elimination of marginal offerings. Various concepts will be addressed including product differentiation, the product life cycle, product design packaging, branding, positioning, and related concepts.

**MRBL 373 Buyer Behavior.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 308 and junior standing; PSYC 101 and SOCY 101 recommended. Study of the relevant psychological, sociological, and anthropological variables that shape buyers' activities and motivations in household and organizational decision making. Throughout the course, students consider the issue of why consumers behave as they do in the marketplace and the nature of their choices as individual, family, and institutional buyers.

**MRBL 376 Dynamics of Retail Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 308 and junior standing. A comprehensive view of retailing and an application of marketing concepts in a practical retail managerial environment. Students learn to evaluate retail firms and to identify their strengths and weaknesses.

**MRBL 378 International Marketing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 308, or permission of chair, and junior standing. This course is designed to orient students toward global marketing and to develop an understanding of the differences among foreign marketing environments. Subject areas

emphasized are the differences and similarities between domestic and international marketing and changes in the international marketing environment. This course also introduces students to international marketing policies.

**MRBL 427/MGMT 427 Labor and Employment Relations Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 323, or permission of instructor, and junior standing. A survey of legislation and court and administrative body decisions affecting the employer/employee relationship.

**MRBL 432/FIRE 432 Insurance Law.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior standing. The legal concepts and doctrines applicable to insurance. Fundamental legal aspects of life, health, property, and liability insurance.

**MRBL 474 Personal Selling and Sales Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MRBL 308. Restricted to senior-level business majors or to students having permission of the department chair. Examines the fundamental nature of personal selling in the promotion mix, including the sales process and the techniques used in performing the selling function. Explains the diverse decisions and the activities necessary to manage the outside sales force efficiently and effectively to achieve the organization's overall goals.

**MRBL 475 Services Marketing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 308 or permission of the instructor, and junior standing. Students develop both a theoretical and practical understanding of "the service product," including the role of customer service in retail and industrial settings. Students learn techniques for analyzing and improving service system

design. Students develop an understanding of "quality" as it relates to service products, and they exercise a number of approaches for assessing and improving perceived service quality.

**MRBL 476 Marketing Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Restricted to senior-level marketing majors who have completed a minimum of 15 credits of marketing courses (in addition to MRBL 308). A case course requiring the senior marketing student to apply his or her knowledge to the solving of marketing managerial problems.

**MRBL 478 International Marketing Strategy.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MRBL 308, or permission of the department chair, and junior standing. This course offers students the opportunity for an in-depth study of marketing strategy in a particular region of the world. Reference will be made to the trade problems experienced by U.S. companies exporting to and importing from the region. Recent changes in the international business environment will also be discussed.

**MRBL 481-482/ACCT 481-482 Law for Accountants I and II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: Senior accounting major or permission of instructor. Provides detailed examination of laws that are of particular importance to accountants, along with ethical considerations and social and political influences. First semester: contracts, sales, agency, commercial paper, secured transactions, and bankruptcy. Second semester: security regulations, antitrust, partnerships, corporations, suretyship, insurance, wills, and trusts. Students may not receive degree credit for MRBL 481-482 and for MRBL 323, 324.

**MRBL 491 Topics in Marketing and Business Law.**

Semester course; variable credit. Maximum of three credits per course; maximum total of six credits for all topic courses. Prerequisite: Junior standing. An in-depth study of a selected business topic, to be announced in advance. For students to receive credit toward a marketing major or minor, the topic must be a marketing topic.

**MRBL 492 Independent Study in Marketing and Business Law.**

Semester course; 1-3 credits. Maximum total of three credits. Prerequisites: Junior or senior standing as a major in a business curriculum, approval of adviser and department chair prior to registration. Intensive study under supervision of a faculty member in an area not covered in-depth or contained in the regular curriculum. To receive credit toward a marketing major or minor, the student must focus on an area within the marketing discipline.

**MRBL 493 Internship in Marketing and Business Law.**

Semester course; 3 credits. Prerequisites: Senior standing in the major offering the internship and permission of the department chair. Intention to enroll must be indicated to the instructor prior to or during advance registration for semester of credit. Involves students in a meaningful experience in a setting appropriate to the major. Graded as pass/fail at the option of the department.





# School of Dentistry

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**The School of Dentistry has a long history of educating practitioners capable of meeting the oral health care needs of the communities they serve.**

## **Undergraduate and Professional Programs**

Dental Hygiene B.S.  
Dentistry D.D.S.

520 N. 12th St. • P.O. Box 980566  
 Richmond, VA 23298-0566  
 (804) 828-9183 • Fax (804) 828-6072  
[views.vcu.edu/dentistry](http://views.vcu.edu/dentistry)

#### **Ronald J. Hunt**

Harry Lyons Professor and Dean (1998)  
 D.D.S. 1973 University of Iowa  
 M.S. 1982 University of Iowa

#### **James H. Revere Jr.**

Assistant Professor of Orthodontics  
 and Executive Associate Dean (1968)  
 B.A. 1961 University of Richmond  
 D.D.S. 1965 Medical College of Virginia

#### **Carolyn Booker**

Assistant Dean for Students  
 B.S. 1976 South Carolina State University  
 M.A. 1977 South Carolina State University  
 Ph.D. 1987 Southern Illinois University

#### **Marshall P. Brownstein**

Associate Professor of Pediatric Dentistry and  
 Assistant Dean for Admissions (1975)  
 B.S. 1963 University of Maryland  
 D.D.S. 1967 University of Maryland

#### **Betsy A. Hagan**

Associate Professor of General Practice and  
 Associate Dean for Clinics (1980)  
 B.S. 1974 Virginia Polytechnic Institute and  
 State University  
 D.D.S. 1978 Medical College of Virginia of  
 Virginia Commonwealth University  
 M.B.A. 1984 Virginia Commonwealth University

#### **James E. Hardigan**

Associate Professor and Associate Dean  
 for Administration (1975)  
 B.S. 1968 Northeastern University  
 M.B.A. 1970 Northeastern University  
 Ph.D. 1975 Cornell University

#### **Harvey A. Schenkein**

Paul Tucker Goad Professor of Periodontics and  
 Microbiology and Immunology and Assistant Dean  
 for Research (1978)  
 B.A. 1970 State University of New York  
 D.D.S. 1974 State University of New York  
 Ph.D. 1978 State University of New York

The School of Dentistry was created in 1893 when the University College of Medicine opened with a dental department as one of its original divisions. The Medical College of Virginia inaugurated a dental education program in 1897, and in 1913 the two schools were merged to form the Medical College of Virginia School of Dentistry.

In 1968, by an act of the Virginia General Assembly, the Medical College of Virginia was merged with Richmond Professional Institute to form Virginia Commonwealth University. The School of Dentistry is located on the Medical College of Virginia Campus.

The facilities of the School of Dentistry are housed in the Wood Memorial and Lyons buildings and contain clinical facilities, research facilities, classrooms, student laboratories, departmental offices and a computer learning laboratory. The laboratories and classrooms contain closed circuit television receivers.

The school provides opportunities for selected, qualified individuals to study dentistry under the most favorable conditions and in accordance with the standards established by the Commission on Dental Accreditation of the American Dental Association.

The degree of doctor of dental surgery (D.D.S) is awarded to graduates of the school's professional program and the bachelor of science degree to graduates of the Division of Dental Hygiene.

### **Mission**

The primary mission of the School of Dentistry is to educate practitioners of dentistry capable of meeting the general oral health care needs of the communities they serve. Within this educational mission is the explicit responsibility to provide future practitioners with the analytical and technological skills which will allow them to be efficient providers of quality oral health care to the public. In addition, practitioners should be responsive to future changes in the profession, be lifetime learners, and be committed to the advancement of dental knowledge.

Integral parts of the mission are the responsibility for the school to assume a prominent role in research and other scholarly activity, to provide service and patient care to the community, and to develop leaders in education and organized dentistry. Consistent with the primary mission, the School of Dentistry provides programs in advanced dental education, dental hygiene and continuing education.

### **Philips Institute for Oral and Craniofacial Molecular Biology**

#### **Francis L. Macrina**

Edward Myers Professor and Director (1974)  
 B.S. 1968 Cornell University  
 Ph.D. 1972 Syracuse University

#### **Todd O. Kitten**

Assistant Professor (1998)  
 B.A. 1986 University of Texas, Irvin  
 Ph.D. 1992 University of Texas, San Antonio

The mission of the Philips Institute of Oral and Craniofacial Molecular Biology is to serve the university and the commonwealth of Virginia as a center of educational and research excellence focused on infectious, neoplastic and genetic diseases of the oral cavity, head and neck.

### **Admission requirements**

A minimum of 90 semester hours (or equivalent) in an accredited college or university is required and must be documented. Most acceptances have a bachelor's degree and/or four years of college. Required courses are general biology, general chemistry, organic chemistry, physics and English. Laboratory experiences are required for those courses where applicable. Biology courses should emphasize zoology rather than botany. Courses in biochemistry, general microbiology or bacteriology, animal physiology, immunology, histology, genetics, embryology, the behavioral sciences, and courses involving psychomotor skills are strongly recommended. Academic credits presented by an applicant must be acceptable for credit toward a degree in the institution in which the courses are taken. Individuals interested in pursuing a career in dentistry should schedule an appointment in the Office of Admissions and Student Affairs for individual guidance.

In order to successfully complete the dental curriculum at VCU, students are required to be able to communicate with faculty, students, staff and patients. Accordingly, applicants may be required to prove their proficiency in American English via standardized tests and interviews. An applicant may consider the option of postponing matriculation until such time that he/she can meet these requirements.

Participation in the Dental Admission Test (DAT) of the American Dental Association is required. It is recommended that this test be taken the year before the intended matriculation year. Applicants are encouraged to take the examination more than one time, and the best set of scores is used as the official set. Information about the Dental Aptitude Test can be obtained from: a) your pre-health advising office of your undergraduate school, b) VCU, School of Dentistry Office of Admissions and Student Affairs; or c) the American Dental Association, Department of Testing.

— — — [www.ada.org/cgi-bin/test-app.asp](http://www.ada.org/cgi-bin/test-app.asp)

### Selection factors

VCU is a state-supported, public university and gives admission preference to state residents. All applicants are evaluated by uniform criteria without regard to age, race, color, national origin, gender, religion, sexual orientation, veteran's status, political affiliation or disability.

Students are accepted by the Admissions Committee on the basis of excellence of predental education, DAT scores, recommendations, experiences in dentistry and results of personal interviews with members of the committee. The interview process is standardized and designed to determine motivation, knowledge of and interest in the dental profession, and to afford the applicant an opportunity to provide additional information pertaining to his/her application. Selection occurs on a rolling admissions basis, and once the class is complete, an alternate list is created. Members of minority groups under represented in dentistry are especially encouraged to apply. Each year a certain number of students who are not accepted into the freshman class are invited to take selected courses with this class. Their performance in these courses plays a vital role in their being considered for the following year's admissions process.

### Application procedures

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS). All applicants are required to submit credentials through this service. Re-applicants must also reapply through

the application service. Application forms can be obtained from AADSAS, 1625 Massachusetts Ave. N.W., Suite 101, Washington, D.C. 20036, (e-mail to [aadsas.appL@aads.jhu.edu](mailto:aadsas.appL@aads.jhu.edu) or call (202) 667-1887) predental advisers in colleges and universities, and the Office of Admissions and Student Affairs, School of Dentistry, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566.

Application to the School of Dentistry can be made through AADSAS on or after May 1 and must be received by AADSAS not later than Jan. 1 of the year preceding intended matriculation.

AADSAS compiles academic records and other pertinent information and forwards these with the application to the School of Dentistry. Qualified applicants are then requested to submit supplemental information, such as the VCU supplemental application. The application fee is \$70.

Applicants will be notified of decisions according to guidelines established by the American Association of Dental Schools. The first acceptances are sent out on Dec. 1, and a \$200 deposit (credited to tuition) is required by Jan. 15. After Feb. 1, the deposit must be received within two weeks following notification of acceptance. A second deposit of \$100 toward tuition is due on May 1. Both deposits are nonrefundable.

A letter of acceptance offers the candidate a position in the class entering for the session cited. Receipt by the Office of Admissions and Student Affairs of the initial \$200 nonrefundable tuition deposit within the prescribed period reserves the position in the class. Failure to reserve a position results in that position being offered to another candidate. The second \$100 nonrefundable tuition deposit initiates active administrative processing of matriculation into the first-year class. Failure to send this deposit results in loss of position, and the position is then offered to another candidate. The act of matriculation also implies a willingness on the part of the student to comply with university rules and regulations, to take an interest in maintaining the ideals of the institution, and to conduct himself/herself in a manner befitting a member of the dental profession.

### Re-admission following a health-related withdrawal<sup>1</sup>

Health-related withdrawals will be granted, except in unusual circumstances, for the remaining portion of the academic year in which withdrawal is approved. In no event will withdrawal exceed one academic year.

A student in the School of Dentistry who is granted a health-related withdrawal and fails to notify the dean by the March 1 preceding the academic year in which studies are to be resumed (declaring his/her intent to return to school), ceases to be a student in the School of Dentistry, forfeits the right to return without reapplication, and must reapply through appropriate procedures if readmittance is desired.

First-year students who forfeit must reapply for a freshman class using the AADSAS system and, if admitted, will be considered first-year students with associated rights and responsibilities. Forfeiting students who withdraw from second-, third- or fourth-year classes must apply in writing for admission with advanced standing according to established procedures.

Students who are readmitted will receive credit for only those courses which have been completed and a final grade rendered prior to withdrawal. Retention of credit for clinical requirements earned prior to withdrawal will be at the discretion of the appropriate department chair.

Students whose requests for withdrawal are approved by the dean for nonhealth-related reasons through the Academic Performance Committee must apply for readmission with advanced standing.

### Admission with advanced standing

The School of Dentistry will consider applicants for admission with advanced standing on an individual basis depending upon positions available and qualifications of the applicant.

### Financial assistance

A brief description of financial aid based on demonstrated need is contained

<sup>1</sup> This policy statement applies to the School of Dentistry and supplements the university policy on health-related withdrawals.

in Part III of this bulletin. Financial need-based aid programs available to dentistry students include Health Professions Student Loan, State Dental Practice Scholarship, Virginia Dental Association Student Loan Program and Federal institutional loans. Further information may be obtained from the Office of Admissions and Student Affairs of the School of Dentistry.

### Honors and awards

The School of Dentistry presents numerous awards, honors and scholarships to students during the academic year. These awards are presented during special school events, including graduation, Student Clinic Day and the Senior Gala. Students who excel in scholarship and leadership may also be eligible for membership in university or school honor societies. In addition, students who meet established criteria may be eligible for scholarships or election to membership in organizations related to dentistry.

Omicron Kappa Upsilon is the national honorary dental society. Each year the society selects those students who, in addition to scholarship, have demonstrated exemplary traits of character and potential qualities of future professional growth and attainments.

Phi Kappa Phi is a national honor society which recognizes and encourages superior scholarship. It accepts members from applied and professional fields of study, as well as from letters, arts, sciences, and humanities. The VCU chapter was installed in 1977.

Alpha Omega Scholarship Award is presented to the graduating student who has attained the highest scholastic rating for his/her four years of dental study.

Harry Lyons Merit Scholarship Award is awarded to the graduating senior dental student who has attained the highest grade-point average for his/her four years of dental school.

A. D. Williams Foundation Award is an annual stipend made to a student in each class who demonstrates, by virtue of high scholastic attainment and professional performance, unusual promise and ability. Character, motivation, intellectual curiosity and realization of the opportunities for intellectual development will be considered in the award, which is made at the end of the academic year.

O. M. Clough Award is awarded to a graduating senior dental student for outstanding achievement in restorative dentistry.

William B. Fitzhugh Scholarship Award is awarded to an incoming dental student who has demonstrated financial need, preference being given to students who have demonstrated athletic abilities at their undergraduate institution.

R. Ashton Gay and Henry F. Vaughan Scholarship is awarded to a student who was a Virginia resident at the VCU School of Dentistry, demonstrates academic excellence and leadership during the D-1 year, and has demonstrable need of financial assistance at the beginning of the D-2 year.

Edmond T. Glenn Award is awarded on the basis of financial need to a student ranked in the upper half of the class at the end of the D-3 year and who has been involved in school/class activities.

International College of Dentists Award is presented to the graduating dental student who has shown the most professional growth and development during his/her years of dental study.

Pierre Fauchard Academy presents an award to the graduating dental student who has exhibited leadership qualities and through his/her accomplishments has demonstrated dedication to the advancement of dental literature.

The Richmond Dental Study Club Memorial Endowment Scholarship is awarded annually to a D-3 (junior) dental student based on his/her having a grade-point average in the top 25 percent of the class and demonstrating exceptional leadership and participation in school and/or community extra-curricular activities at the end of the D-2 (sophomore) year.

Alexander Kaufman Award is awarded to a junior dental student based on class leadership and financial need.

P. B. Miller Award awarded to the dental student judged by faculty as having demonstrated excellent understanding of the relationship between restorative dentistry and periodontics.

Robert M. Saunders Scholarship awarded to a junior or senior Virginia resident predoctoral dental student with excellent academic credentials.

### Curriculum leading to the D.D.S. degree<sup>1</sup>

The curriculum in the dental school is organized into a four-year program leading to the doctor of dental surgery (D.D.S.) degree. The academic year begins in July and extends through May. The program emphasizes study in three broad areas: basic human sciences, clinical sciences, and social sciences.

The basic human sciences include the in-depth study of human anatomy, biochemistry, genetics, microbiology, pathology, pharmacology and physiology.

The clinical sciences prepare the student for the actual practice of dentistry and provide exposure to the various specialties in dentistry.

The behavioral sciences cover such topics as dental health needs, the system of health care delivery, practice management, professional ethics and behavioral factors.

Laboratory and clinical experiences are offered throughout the four years to develop the skills and judgment vital to the practice of general dentistry.

	Credits
<b>Freshman, first semester</b>	
ANAT 501 Gross Anatomy	9.5
ANAT 503 Neuroanatomy	1.5
BIOC 501 Biochemistry	5.0
DENS 510 Scientific Inquiry	1.0
DENS 511 Dentistry and Education	0.5
HGEN 531 Dental Genetics	2.0
GENP 501 Introduction to Preventive Dentistry	0.5
GENP 510 Dental Materials	2.5
GENP 511 Dental Anatomy	2.5
GENP 514 Fundamentals of Occlusion	3.0
<b>Freshman, second semester</b>	
ANAT 502 Microscopic Anatomy	6.0
GENP 512 Operative Dentistry	6.5
MICR 513 Infection and Immunity in Dentistry	5.0
PHIS 502 Mammalian Physiology	5.0
<b>Sophomore, first semester</b>	
DENS 601 Patient Management	0.5
DENS 621 Occlusion	2.0
DENS 625 Clinical Skills	1.0
GENP 620 Cariology	3.0
GENP 621 Operative Dentistry	3.0

<sup>1</sup> In general, courses offered as part of the curriculum in dentistry are not available to other students in the university. Exceptions may be granted by the dean of the School of Dentistry to students enrolled in graduate degree programs upon written request of the chair of the department in which the student is seeking a degree.

ORPT 621 Dental Radiology	0.5	PEDD 733 Advanced Pediatric Dentistry	2.0
ORTH 623 Orthodontics	*	PEDD 739 Clinical Pediatric Dentistry 3	1.5
PATH 601 General Pathology	6.0	PERI 739 Clinical Periodontics 3	5.0
PEDD 622 Introduction to Pediatric Dentistry	*	PROS 731 Complete Denture Prosthodontics	1.5
PERI 626 Periodontics I	2.0	PROS 735 Removable Partial Denture Lecture	1.5
PHTX 609 Dental Pharmacology and Pain Control	*	PROS 739 Clinical Removable Prosthodontics 3	1.5
PROS 622 Preclinical Fixed Prosthodontics	*	PROS 739 Clinical Fixed Prosthodontics 3	2.0
PROS 623 Preclinical Complete Denture Prosthodontics	*	PROS 745 Clinical Principles of Fixed Prosthodontics	1.0

**Sophomore, second semester**

DENS 625 Clinical Skills	2.0	ENDO 749 Clinical Endodontics 4	*
ENDO 622 Principles of Endodontics	2.5	GENP 740 Practice Management	1.5
HGEN 631 Advanced Dental Genetics	1.0	GENP 742 Senior Tx Seminar	2.0
ORPT 622 Oral Pathology	2.5	GENP 743 Clinical Module	*
ORSG 622 Introduction to Oral Surgery	1.0	GENP 747 Dental Assistant Utilization	1.0
ORTH 623 Orthodontics	2.0	GENP 749 Clinical Operative 4	*
PEDD 622 Introduction to Pediatric Dentistry	2.5	ORPT 747 Radiology Rotation	1.5
PERI 629 Periodontics II	4.0	ORPT 749 Emergency Service	*
PHTX 609 Dental Pharmacology and Pain Control	4.0	ORSG 741 Special Patient Care	*
PROS 622 Preclinical Fixed Prosthodontics	7.0	ORSG 749 Clinical Oral Surgery 4	*
PROS 623 Preclinical Complete Denture Prosthodontics	6.0	PEDD 749 Clinical Pediatric Dentistry 4	*
PROS 624 Preclinical Removable Prosthodontics	4.0	PERI 749 Clinical Periodontics 4	*
PROS 627 Diagnostic Impression Lab	1.0	PROS 749 Clinical Removable Prosthodontics 4	*
		PROS 749 Clinical Fixed Prosthodontics 4	*

**Junior, first semester**

ENDO 731 Endodontic Therapy	1.0	DENS 741 Head and Neck Pain	1.0
ENDO 739 Clinical Endodontics 3	**	DENS 745 Records Management	0.5
GENP 739 Clinical Operative 3	*	ENDO 749 Clinical Endodontics 4	1.5
GENP 745 Clinical Principles of Restorative Dentistry	1.0	GENP 741 Practice Administration	3.0
ORPT 737 Radiology Rotation	*	GENP 743 Clinical Module	6.0
ORSG 731 Physical Evaluation and Principles of Medicine	2.0	GENP 749 Clinical Operative 4	4.0
ORSG 733 Principles of Oral and Maxillofacial Surgery	*	ORPT 749 Emergency Service	1.5
ORSG 739 Clinical Oral Surgery 3	*	ORSG 741 Special Patient Care	1.0
ORTH 739 Clinical Orthodontics 3	*	ORSG 749 Clinical Oral Surgery 4	2.0
PEDD 733 Advanced Pediatric Dentistry	*	PEDD 749 Clinical Pediatric Dentistry 4	2.0
PEDD 739 Clinical Pediatric Dentistry 3	*	PERI 749 Clinical Periodontics 4	4.0
PERI 733 Periodontics III	1.0	PROS 749 Clinical Removable Prosthodontics 4	6.0
PERI 739 Clinical Periodontics 3	*	PROS 749 Clinical Fixed Prosthodontics 4	6.0
PHTX 611 Dental Pharmacology and Pain Control	2.0		
PROS 737 Prosthodontics Diagnosis and Treatment Planning	1.0		
PROS 739 Clinical Removable Prosthodontics 3	*		
PROS 739 Clinical Fixed Prosthodontics 3	*		

**Junior, second semester**

DENS 733 Geriatric Dentistry	1.0		
DENS 735 Records Management	0.5		
ENDO 739 Clinical Endodontics 3	1.5		
GENP 739 Clinical Operative 3	5.0		
GENP 747 Dental Assistant Utilization**	1.0		
ORPT 732 Clinical Oral Pathology and Oral Medicine	1.0		
ORPT 737 Radiology Rotation	**		
ORSG 733 Principles of Oral and Maxillofacial Surgery	2.0		
ORSG 735 Medical Emergencies	1.0		
ORSG 739 Clinical Oral Surgery 3	1.5		
ORTH 733 Orthodontic Therapy	1.0		
ORTH 739 Clinical Orthodontics 3	1.5		

**Senior, first semester**

ENDO 749 Clinical Endodontics 4	*
GENP 740 Practice Management	1.5
GENP 742 Senior Tx Seminar	2.0
GENP 743 Clinical Module	*
GENP 747 Dental Assistant Utilization	1.0
GENP 749 Clinical Operative 4	*
ORPT 747 Radiology Rotation	1.5
ORPT 749 Emergency Service	*
ORSG 741 Special Patient Care	*
ORSG 749 Clinical Oral Surgery 4	*
PEDD 749 Clinical Pediatric Dentistry 4	*
PERI 749 Clinical Periodontics 4	*
PROS 749 Clinical Removable Prosthodontics 4	*
PROS 749 Clinical Fixed Prosthodontics 4	*

**Senior, second semester**

DENS 741 Head and Neck Pain	1.0
DENS 745 Records Management	0.5
ENDO 749 Clinical Endodontics 4	1.5
GENP 741 Practice Administration	3.0
GENP 743 Clinical Module	6.0
GENP 749 Clinical Operative 4	4.0
ORPT 749 Emergency Service	1.5
ORSG 741 Special Patient Care	1.0
ORSG 749 Clinical Oral Surgery 4	2.0
PEDD 749 Clinical Pediatric Dentistry 4	2.0
PERI 749 Clinical Periodontics 4	4.0
PROS 749 Clinical Removable Prosthodontics 4	6.0
PROS 749 Clinical Fixed Prosthodontics 4	6.0

\* Continues into second semester.

\*\* Completed first semester senior year.

**Academic Performance Committee guidelines**

The faculty of the Virginia Commonwealth University School of Dentistry has the responsibility for evaluating the student's academic performance. It is incumbent on the course directors or their designees to specify, at the time that courses first convene, the criteria to be used in student assessment and the standards by which they will be judged.

The guidelines which govern the actions of the Academic Performance Committee and which guide the academic activities of the students are distributed to all students at the beginning of their studies. They are available

upon request from the Office of Academic Affairs, School of Dentistry.

**Office of Continuing Education****Martha C. Clements**

Director, Continuing Education (1999)

B.S. 1993 Virginia Commonwealth University

M.Ed. 1997 Virginia Commonwealth University

For every professional person who serves the health sciences, education must be a lifetime commitment.

Graduation from dental school is the beginning of a lifelong educational experience for the serious, conscientious student of dentistry. Regardless of how well prepared a health professional may be at the time of graduation, the adequate knowledge of yesterday is often insufficient information for today and tomorrow. With the rapid advancements made in dental technology and techniques, the professional must constantly seek new knowledge if the health care provider is to improve the health care given to patients.

Although the majority of continuing education courses are presented at the School of Dentistry, some offerings are given in other locations. The courses, which vary in length from one day to four days, are scheduled throughout the year and consist of a variety of instructional methods from didactic to hands-on participation in clinical programs.

The instructional staff is comprised of faculty from the VCU School of Dentistry, guest lecturers from other dental schools, and members of the dental profession and related professions from the United States and other countries.

**Advanced Dental Education programs**

The School of Dentistry provides advanced dental education programs in the areas of endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics, general practice residency (GPR) and advanced education in general dentistry (AEGD). Satisfactory completion of the program leads to the award of a certificate of training and certifies eligibility for examination by the appropriate specialty board. A master of science in dentistry for most programs is planned for implementation in the fall of 2001. All programs are accredited by

the Commission on Dental Accreditation of the American Dental Association. A program also is offered for advanced education in anesthesiology for dentistry. Those enrolled in the advanced education programs are full-time resident trainees, considered to be the equivalent of full-time students. Under special circumstances, trainees may be accepted into some programs on a part-time basis.

Applications for admission should be directed to the director of the appropriate program, School of Dentistry, Medical College of Virginia Campus, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566. Successful completion of Part II is required prior to admittance to the program.

## Advanced Education in General Dentistry

### Carol N. Brooks

Assistant Professor of General Practice and Program Director (1995)  
B.S. 1975 Medical College of Virginia of Virginia Commonwealth University  
D.D.S. 1994 Medical College of Virginia of Virginia Commonwealth University  
Certificate 1995 Advanced Education in General Dentistry

The purpose of this 12-month advanced education residency program is to provide advanced education and clinical experience to prepare dental school graduates for a career in the practice of comprehensive, general dentistry. This program has a strong emphasis on treatment planning, experience with new technology, developing skills in aesthetic dentistry and restoration of implants. Graduates of this program will have attained added competency and confidence in all areas of dental care, practice management and professional responsibility. Further, this program provides residents with meaningful experiences in the delivery of dental care to diverse populations and people at high risk for dental disease. A strong affiliation exists between the School of Dentistry and the statewide Virginia Area Health Education Center (AHEC), whose mission is to increase primary health care in underserved areas. The AEGD program works in concert with AHEC to deliver dental care and recruit/train minority health care providers from health professional shortage areas.

The School of Dentistry is committed to advanced dental education. The residents will receive hands-on experience with diagnostic and therapeutic care of special patient populations in addition to extensive training in the art and science of general dentistry. AEGD residents may be required to participate in off-site clinical experiences outside the city of Richmond, Va. Funds will be provided for travel and lodging when required.

**Eligibility and Selection.** Dentists with the following qualifications are eligible to apply for the AEGD program: Dental graduates from institutions in the United States accredited by the Commission on Dental Accreditation of the American Dental Association and who have passed Part I of the National Board Examination.

Selection criteria include: didactic and clinical achievements, extramural experience, interpersonal skills, and a demonstrated commitment to pursue a career in general dentistry. Every effort is made to recruit qualified applications from minority dentists and dentists from health professional shortage areas or dentists who profess a desire to serve in these areas. A selection committee consisting of the program director, the assistant dean for admissions, members from specialty areas, former residents and current residents will screen all applications. Using the above-mentioned selection criteria, the most promising applicants will be invited for personal interviews. Trainees and alternates will be selected. This program participates in the Postdoctoral Application Support Service Program and the Postdoctoral Dental Matching Program. Telephone (804) 828-3601; fax (804) 828-3159; e-mail cbrooks@denl.den.vcu.edu.

## Endodontics

### Gary R. Hartwell

Professor, Diplomate of the American Board of Endodontics Program Director and Department Chair (1987)  
D.D.S. 1966 West Virginia University  
M.S. 1974 George Washington University

The advanced education program in endodontics is designed to educate qualified individuals to pursue careers as teachers, researchers and practicing clinical specialists of endodontics.

The basic 24-month certificate program is composed of two interrelated phases. The first consists of lecture courses which provide the student with a firm biological basis for patient care. The second phase consists of lectures, seminars and clinical training which is designed to produce clinical proficiency. Research experience is gained through the completion of an individual research project. The entire program conforms to guidelines established by the American Board of Endodontics, the American Association of Endodontics, and the Commission on Dental Accreditation of the American Dental Association and a full accreditation status.

## General Practice Residency

### C. Daniel Dent

Clinical Professor, Program Director and Chair,  
Division of Dental Medicine (1978)  
B.A. 1970 University of Virginia  
D.D.S. 1974 Virginia Commonwealth University

The School of Dentistry, the Medical College of Virginia Hospitals of Virginia Commonwealth University, and the Veterans Affairs Medical Center offer a two-year residency in the general practice of dentistry. The program is designed to provide the new dentist with the experience and skills needed for the total care of the dental patient. Patients include those requiring adjunct medical support services, those suffering from a variety of medical conditions, and those who are at particularly high risk for infection.

Primary dental care is provided in a number of clinical settings, including the MCV Campus and Hunter Holmes McGuire Veterans Affairs Medical Center. Dental care for the hospitalized patient is provided in both ambulatory and nonambulatory settings.

Rotations in the general practice residency program include anesthesia, internal medicine, oral pathology, oral and maxillofacial surgery, radiation oncology, cardiology, endoscopy, speech pathology and emergency medicine. Supplementing these rotations is core course work in physical diagnosis as well as lectures, rounds and seminar series. Dental residents have the opportunity to participate in conferences and rounds presented by other clinical departments. Dental conferences include treatment planning, literature

review, oral pathology slide seminar, treatment conference, departmental rounds and lectures in all of the dental specialties.

Didactic courses and clinical experience are provided in placement and restoration of dental implants. Residents also are provided training to enable them to administer conscious sedation under the dental regulations in the State of Virginia.

The faculty include general practitioners, consulting physicians, and attendings from each of the dental specialties. Dental residents are supervised during all phases of treatment in all settings. Competence in the evaluation and management of patients with medical disorders is a major objective of the training program.

## Oral and Maxillofacial Surgery

### Robert A. Strauss

Associate Professor and Program Chair (1987)

B.S. 1975 State University of New York, Buffalo

D.D.S. 1979 State University of New York, Buffalo

The oral and maxillofacial surgery program is designed to provide extensive didactic and clinical experience in all aspects of the specialty. Those who complete training satisfactorily fulfill the prerequisites for examination and certification by the American Board of Oral and Maxillofacial Surgery.

The didactic portion of the program includes formal courses in oral pathology, anatomy and physical diagnosis, as well as numerous weekly conferences and seminars. Clinical rotations on oral pathology, anesthesia, medicine, surgical oncology, neurosurgery, cardiology, plastic surgery, emergency room and the trauma services are used to supplement the trainee's surgical experience. Throughout the program there is a constant correlation of the clinical experience with the biomedical sciences.

Through the multiple clinical and didactic facilities of the VCU medical center complex, the McGuire Veterans Affairs Medical Center, and St. Mary's and the Richmond Eye and Ear Hospitals, there is ample material for education in the latest oral and maxillofacial surgical techniques. The oral and maxillofacial surgery service is responsible for diagnosis and management of diseases and injuries related to the oral and facial region. Trainees are involved in all aspects of treatment

including simple and complicated oral surgery, anesthesia and pain control, oral and maxillofacial trauma, preprosthetic surgery, orthognathic surgery, head and neck pathology, oral and maxillofacial reconstruction, temporomandibular joint surgery, laser surgery, cosmetic facial surgery, microneural and microvascular surgery. During the four years, the trainee assumes ever-increasing responsibilities as time and abilities dictate.

Upon satisfactory completion of the four-year residency, the trainee may earn the doctor of medicine degree from the School of Medicine by enrolling in the second and third years of that curriculum. This curriculum may be followed by a one-year residency in general surgery at MCV Hospitals of Virginia Commonwealth University to complete the combined program.

## Orthodontics

### Steven J. Lindauer

Professor and Program Director (1989)

B.A. 1982 University of Pennsylvania

D.M.D. 1986 University of Connecticut

M.D.Sc. 1989 University of Connecticut

VCU's School of Dentistry offers this 24-month advanced education program in orthodontics through the Department of Orthodontics. The program incorporates state-of-the-art clinical care in orthodontics in an environment modeled after private orthodontic practice. The curriculum is composed of seminars and small group instruction with emphasis on critical thinking and problem solving. Contemporary orthodontic treatment is reviewed for substantive and scientific content. Also included are regular orthognathic surgery conferences and interactions with other dental and medical specialties. The successful completion of a research project is a requirement of the program.

Completion of the program and eligibility for the limited practice of orthodontics is certified by the faculty in orthodontics. The program makes the student educationally qualified to take the written portion of the American Board of Orthodontics, which is required for completion of the program.

A \$20,000 salary for the first year and \$22,000 for the second year is currently available to orthodontic residents through the Medical College of

Virginia Hospitals at VCU. Some of this salary is to be used to support travel to orthodontic meetings, including the American and Virginia Associations of Orthodontists' annual meetings.

A graduate program, requiring additional time to complete, is also available for students that have been accepted into the two-year program. This program leads to a certificate in orthodontics and a master of science degree in a basic health science. The curriculum is designed for each individual by the Department of Orthodontics and the School of Medicine department concerned.

## Pediatric Dentistry

### Arthur P. Mourino

Associate Professor and Program Director (1974)

B.S. 1965 Georgetown University

M.S. 1967 Hofstra University

D.D.S. 1972 Georgetown University

M.S.D. 1974 Indiana University

The advanced dental education program in pediatric dentistry is a 24-month program designed to meet the guidelines of the American Academy of Pediatric Dentistry and the requirements of the Commission on Accreditation of the American Dental Association. It is a combined university and hospital-based program leading to a certificate of advanced training in pediatric dentistry. In addition, a combined program leading to an M.S. or Ph.D. degree with a clinical specialty in pediatric dentistry is available for interested and qualified individuals.

Emphasis is placed on a diversified educational experience. Teaching and research opportunities supplement the clinical, hospital, and didactic components of the program. The course of study includes clinical experience in the treatment of infants, children, adolescents and those individuals with special needs. Rotations occur in pediatric medicine, pediatric emergency room, general anesthesia and oral pathology. Seminars are held in pediatric dentistry, orthodontic diagnosis, treatment planning, growth and development, cephalometric analysis, pediatric dentistry literature review and behavioral guidance. Formal courses in biostatistics, principles of pediatrics, pediatric advanced life support, head and neck anatomy, basic sciences and clinical core courses are required. Elective courses are available within the university and the School of Dentistry.

## Periodontics

### Thomas C. Waldrop

Associate Professor and Program Director (1994)  
D.D.S. 1973 Medical College of Virginia of Virginia  
Commonwealth University  
M.S. 1978 University of Texas  
Certificate 1978 Wilford Hall Medical Center  
Diploma 1982 American Board of Periodontology

The advanced education program in periodontics consists of a 36-month curriculum leading to a certificate of training in periodontics. Courses in the basic and clinical sciences, medicine, head and neck anatomy, statistics and advanced cardiac life support are required. Periodontal courses include lectures, current and periodontal literature, medical-oral medicine, treatment planning, case presentation, and surgical seminars. All provide opportunities for concentrated learning and experience in the clinical specialty of periodontics, as well as interaction with other clinical specialties. The program includes a diverse program in clinical instruction. The program affords the student the opportunity to develop the capacity for judgment and adaptability from knowledge of basic and clinical science and from evaluation of the literature. The program prepares the student for board certification in the specialty of periodontics.

Emphasis also is placed on the most current clinical advances in implantology, laser techniques and regenerative procedures. A comprehensive conscious sedation program is offered. Rotations include oral medicine and anesthesiology at MCV Hospitals, and oral pathology. The program involves clinical and classroom teaching to undergraduate students. Research activities — which lead to an M.S. (once program is approved by SCHEV), publication and presentation — are required. Specialty faculty attend the program, including affiliate faculty in the basic sciences. The program starts the first week in July. First-, second- and third-year students receive a stipend.

For students interested in pursuing a Ph.D., basic health science programs are offered through the School of Medicine. A Ph.D. combined program requires a minimum of 60 months for the Ph.D. degree. Application is independent from the certificate and M.S. programs.

## Prosthodontics

### David R. Burns

Associate Professor and Program Director (1985)  
B.S. 1976 Lewis and Clark College  
D.M.D. 1980 University of Oregon  
Certificate 1985 Emory University

The School of Dentistry offers a three-year advanced education program in prosthodontics. Prosthodontics is that specialty of dentistry which endeavors to repair and/or replace the function of the lost or damaged natural dentition. The curriculum combines didactic and clinical instruction in the biology, biomaterials, and clinical application of prosthodontic principles. Teaching is by formal classroom instruction, seminar, and clinical practice. A basic science core curriculum provides instruction in basic human sciences. Prosthodontic instruction is accomplished by seminars and one-on-one clinical instruction. The student is expected to be able to utilize the resources of the medical library in development of seminars and to lead topic-based reviews of the literature. Classes, seminars and literature review sessions are held weekly during the fall and spring semesters. Clinical instruction is provided year-round. The program follows the School of Dentistry calendar, except for the starting date, which is the first weekday in July.

The program is not entirely based upon specific requirements, though certain levels of accomplishment are expected. Didactic requirements are based on performance, attendance and examination. No grade lower than "C" is acceptable from any basic science course. Prosthodontic instruction includes: fixed prosthodontics, removable, complete and partial dentures; maxillofacial prosthodontics and prosthodontic laboratory procedures; the utilization of implants to support prostheses; and fully adjustable instrumentation, generated path, masticatory dysfunction and occlusion.

Each student is required to propose, perform and report on a research topic of choice. Research topics will be submitted, reviewed and approved by a committee of faculty. Funding is generally available for the project demands.

The program also requires that students engage in teaching undergraduate dental students.

## Combined D.D.S. and M.S. or Ph.D. programs

The dental curriculum provides an opportunity for interested dental students to enter a combined D.D.S./M.S. or Ph.D. program.

Individualized curricula are developed for such students with the approval of the students' advisers in the graduate department of study and the assistant dean for research of the School of Dentistry. Ordinarily, the combined program requires more than four years to complete requirements for both degrees. For further details, contact the assistant dean for research at the School of Dentistry.

## Division of Dental Hygiene

### Janet L. Scharer

Assistant Professor and Program Director (1990)  
A.S. 1968 Cuyahoga Community College  
B.S. 1971 Ohio State University  
M.A. 1974 Ohio State University

Pellegrini, Joan M. (1989) Assistant Professor  
A.A. 1968 Fairleigh Dickinson University  
B.S. 1970 Fairleigh Dickinson University  
M.S. 1972 Columbia University

The Division of Dental Hygiene, which began in 1969, offers courses leading to a bachelor of science in dental hygiene. The program requires two years of liberal arts study, with a minimum of 60 semester hours, followed by two years of study focusing on basic and dental sciences, dental hygiene theory, community health and preclinical and clinical experiences. The Dental Hygiene Program is accredited by the Commission on Dental Accreditation of the American Dental Association. Upon successful completion of the program, graduates are eligible for national, regional and state board licensing examinations.

## Philosophy and general educational goals

The Division of Dental Hygiene believes the modern practicing dental hygienist requires a broad range of skills to function effectively. Competency in specific clinical-technical skills, while essential, will not be sufficient to meet increasing social needs and demands for comprehensive oral health care at all societal levels. The division views the baccalaureate degree dental



hygienist as a leader, not only in helping the dental profession respond to a changing environment, but also in developing and initiating interventions which prevent and control oral disease and promote oral wellness, and in facilitating that change itself.

The division, in conjunction with the School of Dentistry, also assumes a responsibility to provide current and future practitioners with skills that allow them to provide efficient, quality oral health care to the public, to be responsive to a changing profession, to be lifelong learners, and to assume leadership roles within the profession and community.

Within the Division of Dental Hygiene, the clinical component is designed to provide the student with the opportunity to develop, utilize and enhance the knowledge and skills of dental hygiene practice. Dental hygiene services are provided in a clinical model which emphasizes comprehensive care and provides a foundation for transference of skills to the work environment. The baccalaureate degree program in dental hygiene prepares the graduate to:

- perform traditional dental hygiene functions,
- employ decision-making skills in providing clinical services in health care and educational programs,
- function with supervision in an extended role in the provision of independent units of service,
- assume a leadership role within political, social, educational and professional settings to improve the health of all members of society,
- design and implement health programs utilizing principles and theories of learning, health care organizations, behavioral science and communication skills,
- apply research methodology to design and to evaluate the effectiveness of health care and educational programs,
- administer dental service programs in comprehensive health care units and community settings,
- function as a dental health consultant, and
- prepare for graduate and advanced professional programs.

## Honors and awards

### Sigma Phi Alpha is the National Dental Hygiene Honor Society.

Elected to membership are senior dental hygiene students who rank highest in scholarship and character and exhibit potential qualities for future growth and attainment as recommended by faculty members. Membership is limited to 10 percent of the graduating class and is selected from the upper 20 percent of the class.

**Community Dental Hygiene Award.** This award, presented annually to a graduating senior dental hygiene student, is based on the student's ability to recognize and understand the oral health needs of a community, as well as on the demonstrated ability to develop and implement a program to meet those needs.

**Virginia Dental Hygienists' Association Award.** An annual award is made to one graduating senior and is based on the student's scholastic ability, clinical proficiency, and professional contributions. A one-year membership in the American Dental Hygienists' Association and a certificate are presented to the selected student.

**A. D. Williams Award.** An annual stipend may be made to a student in each class who demonstrates unusual promise and ability by virtue of high scholastic attainment and professional performance. Character, motivation, intellectual curiosity and realization of the opportunities for intellectual development will be considered in the award.

## Financial aid

Scholarships and loans are available through various sources. Full information on financial aid is available upon request from the Financial Aid Office, School of Dentistry, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566.

## Admission requirements

Two years of liberal arts study with a minimum of 60 semester hours of transferable quality academic courses are required.

	Credits
English	6
General biology and laboratory	3-5
College chemistry and laboratory	3-5
Anatomy and physiology and laboratory	5-8
Microbiology and laboratory	3-5

Humanities	3
Introductory sociology	3
Introductory psychology	3
Speech	3
Statistics	3
Visual/performing arts	2-3

- Approved electives fulfilling the distribution requirements of the liberal arts college or university currently attending.
- A minimum GPA of 2.5 in both, cumulative and math/science, is required for admission.
- All non-native English speaking applicants, regardless of immigration status or previous course work, must present a TOEFL score of 580 or better and a TWE score of 4.5 or better.

For pre-admission academic counseling, contact Admissions, Division of Dental Hygiene, School of Dentistry, Virginia Commonwealth University, P.O. Box 980566, Richmond, VA 23298-0566. Telephone (804) 828-9096 or e-mail dentalhygiene@vcu.edu.

An application packet may be obtained by contacting Virginia Commonwealth University, MCV Campus Undergraduate Admissions, P.O. Box 980632, Richmond, VA 23298-0632. Call (804) 827-0152 or e-mail cagwaltn@vcu.edu.

## Curriculum

The curriculum includes study of the basic, dental, and clinical sciences through lecture, laboratory clinical and community experiences.

	Credits
<b>Junior year, first semester</b>	
ANAT 301 Head and Neck Anatomy	5.0
ANAT 302 Microscopic Anatomy	3.0
DENH 301 Dental Hygiene Theory I	5.0
GENP 302 Dental Materials	2.0
GENP 311 Dental Anatomy and Occlusion	2.0
MICR 365 Infection and Immunity	2.0
ORPT 301 Dental Radiology	0.5
PERI 326 Periodontics I	1.5
	<hr/> 21.0
<b>Junior year, second semester</b>	
DENH 302 Dental Hygiene Theory II	2.0
DENH 312 Preventive Oral Health Education	3.0
DENH 342 Nutrition	3.0
DENH 322 Radiology Seminar and Rotation	1.5
DENH 327 Clinical Dental Hygiene I/Seminar	4.0
GENP 307 Research/Biostatistics	2.0
ORPT 324 Oral Pathology	3.0
PERI 329 Periodontics II	4.0
	<hr/> 22.0
<b>Senior year, first semester</b>	
DENH 401 Dental Hygiene Theory III	2.0
DENH 411 Community Dental Health	2.0
DENH 413 Special Patient Care	3.0

DENH 437 Clinical Dental Hygiene II/Seminar	5.0
PHTX 441 Pharmacology and Pain Control	5.0
	17.0
<b>Senior year, second semester</b>	
DENH 402 Dental Hygiene Theory IV	2.0
DENH 412 Community Dental Health Practicum*+	3.0
DENH 422 Current Issues, the Law and Ethics	2.0
DENH 432 Special Patient Clinical Practicum**	3.0
DENH 442 Introduction to Dental Hygiene Education**	3.0
DENH 447 Clinical Dental Hygiene III/Seminar	6.0
DENS 733 Geriatric Dentistry**	1.0
	15.0-19.0

\* Students must take one of these courses; they may enroll in more than one.

\*\* Students may take this course as an elective.

+ Supervised independent study course.

## Departments and programs of instruction

Detailed information pertaining to course descriptions and degree requirements is available from the School of Dentistry.

## Program in Dental Hygiene

### Janet L. Scharer

Assistant Professor and Program Director (1990)  
A.S. 1968 Cuyahoga Community College  
B.S. 1971 Ohio State University  
M.A. 1974 Ohio State University

## Courses in Dental Hygiene

DENH 301 Dental Hygiene Theory I  
DENH 302 Dental Hygiene Theory II  
DENH 312 Preventive Oral Health Education  
DENH 322 Radiology Seminar and Rotation  
DENH 327 Clinical Dental Hygiene I/Seminar  
DENH 342 Nutrition  
DENH 401 Dental Hygiene Theory III  
DENH 402 Dental Hygiene Theory IV  
DENH 411 Community Dental Health  
DENH 412 Community Dental Health Practicum  
DENH 413 Special Patient Care  
DENH 422 Current Issues, the Law and Ethics  
DENH 432 Special Patient Clinical Practicum  
DENH 437 Clinical Dental Hygiene II/Seminar  
DENH 442 Introduction to Dental Hygiene Education  
DENH 447 Clinical Dental Hygiene III/Seminar  
DENH 449 Clinics in Dental Hygiene  
DENH 450 Independent Study

## Department of General Practice

### David C. Sarrett

Professor and Department Chair (1992)  
D.M.D. 1977 University of Florida  
M.S. 1988 University of Florida

Barnes Jr., Robert F. (1977) Associate Professor

B.A. 1967 University of Virginia  
D.D.S. 1973 Medical College of Virginia of Virginia Commonwealth University

Betzhold, William C. (1993) Assistant Professor

B.S. 1967 Ohio State University  
D.D.S. 1971 Ohio State University  
Certificate in Prosthodontics 1995 Medical College of Virginia of Virginia Commonwealth University

Bogacki, Russell (1997) Assistant Professor

B.S. 1993 George Mason University  
D.D.S. 1997 Medical College of Virginia of Virginia Commonwealth University

Brooks, Carol Nibley (1982) Assistant Professor

B.S. 1975 Medical College of Virginia of Virginia Commonwealth University  
D.D.S. 1994 Medical College of Virginia of Virginia Commonwealth University  
Certificate A.E.G.D. 1995 Medical College of Virginia of Virginia Commonwealth University

Bush, Francis M. (1964) Professor

B.S. 1955 University of Kentucky  
M.S. 1957 University of Kentucky  
Ph.D. 1962 University of Georgia  
D.M.D. 1975 University of Kentucky

Button, Gilbert L. (1976) Associate Professor

B.S. 1969 Virginia Polytechnic Institute and State University  
D.D.S. 1973 Medical College of Virginia of Virginia Commonwealth University  
Certificate 1986 Medical College of Virginia of Virginia Commonwealth University

Certosimo, Alfred J. (1993) Assistant Professor

B.S. 1973 Rutgers University  
D.M.D. 1977 University of Pennsylvania  
C.D.R. 1988 Naval Dental School

Dishman, Michael V. (1988) Assistant Professor

B.S. 1970 Randolph-Macon College  
D.D.S. 1974 Medical College of Virginia of Virginia Commonwealth University

Foster, Francis M. (1991) Assistant Professor

B.S. 1942 Virginia Union University  
D.D.S. 1946 Howard University

Hagan, Betsy A. (1980) Associate Professor and Associate

Dean for Clinical Affairs  
B.S. 1974 Virginia Polytechnic Institute and State University  
D.D.S. 1978 Medical College of Virginia of Virginia Commonwealth University  
M.B.A. 1984 Virginia Commonwealth University

Harrington, Walter G. (1975) Associate Professor

A.B. 1965 Case Western Reserve University  
D.D.S. 1969 Case Western Reserve University

Hellman, Larry Frank (1994) Assistant Professor

B.S. 1963 Midwestern University  
D.D.S. 1967 University of Texas  
M.Ed. 1994 George Washington University

Moon, Peter C. (1971) Associate Professor

B.S. 1965 University of Toledo  
M.S. 1968 and Ph.D. 1971 University of Virginia

Robertello, Francis J. (1993) Assistant Professor

B.A. 1964 Syracuse University  
D.M.D. 1968 University of Pennsylvania  
M.S. 1978 University of Michigan  
M.Ed. 1984 George Washington University

Rose, Jennifer T. (1998) Assistant Professor

B.A. 1993 Virginia Commonwealth University  
D.D.S. 1997 Virginia Commonwealth University School of Dentistry  
A.E.G.D. Certificate 1998 Virginia Commonwealth University School of Dentistry

Wiley, Paul M. (1996) Assistant Professor

B.A. 1972 University of Virginia  
D.D.S. 1976 Medical College of Virginia of Virginia Commonwealth University  
M.S. 1989 University of Michigan  
M.Ed. 1994 George Washington University

### Emeritus faculty

Hunt Jr., Lindsay M. (1985) Professor Emeritus, Former Dean and Henry Lyons Professor

B.A. 1961 University of Oklahoma  
D.D.S. 1965 Baylor University  
Ph.D. 1971 Baylor University

### Adjunct faculty

Adams, A.	Adams, P.J.
Browder	Chung
Cottrell	Covington
Cranham	Duff
Elstner	Eshleman
Fernandez	Finley-Parker
Forgeng	Freeland
Gamache	Griggs
Hall	Healy
Helvey	Hooper
Hubbard	Johnson
Johnston	Kennett
Kessler	King
Kittrell	Kontopanos
Korpics	Lee
Levin	Levitin
McAndrew	McCormick
McNamee	Moore
Pfab	Piascik
Robinson	Root
Rusz	Sayyar
Schroeder	Shepard
Slattery	Soltanian
States	Stenger
Stoner	Taylor, E.
Turnage	Wade
Weaver	White
Whitehill	Wiley, D.
Wolf-Harrington	

**Courses in general practice**

GENP 307 Research Design and Biostatistics (Dental Hygiene)  
 GENP 311 Dental Anatomy and Occlusion (Dental Hygiene)  
 GENP 501 Introduction to Preventive Dentistry  
 GENP 302 Dental Materials (Dental Hygiene)  
 GENP 510 Dental Materials (Dental)  
 GENP 511 Dental Anatomy  
 GENP 512 Operative Dentistry  
 GENP 514 Fundamentals of Occlusion  
 GENP 620 Cariology  
 GENP 621 Operative Dentistry  
 GENP 739-749 Clinical Operative  
 GENP 740 Practice Management  
 GENP 741 Practice Administration  
 GENP 742 Senior Treatment Planning Seminar  
 GENP 743 Clinical Module  
 GENP 745 Clinical Principles of Restorative Dentistry  
 GENP 747 Dental Assistant Utilization

**Department of Endodontics****Gary R. Hartwell**

Professor and Department Chair (1987)  
 D.D.S. 1966 West Virginia University  
 M.S. 1974 George Washington University  
 Diplomate of the American Board of Endodontics

Banghan, Linda W. (1988) Associate Professor  
 D.D.S. 1983 Virginia Commonwealth University  
 Certificate: Aging Studies 1993 Virginia Commonwealth University  
 Byrne, B. Ellen (1999) Associate Professor  
 D.D.S. 1983 Virginia Commonwealth University  
 Certificate in Endodontics 1990  
 Ph.D. 1992 Pharmacology, Virginia Commonwealth University  
 Hahn, Chin-Lo (1991) Associate Professor  
 B.D.S. 1982 Taipei Medical College, Taiwan  
 M.S. 1985 University of Maryland, Baltimore  
 Ph.D. 1989 University of Maryland, Baltimore  
 D.D.S. 1991 University of Missouri, Kansas City

**Emeriti faculty**

Dodds, R. Neil Associate Professor Emeritus  
 B.A. 1953 Carroll College  
 D.D.S. 1957 Creighton University  
 England, Marshall C., Jr., Professor Emeritus  
 B.S. 1954 Maryville College  
 D.D.S. 1958 and M.S. 1967 Medical College of Virginia

**Clinical faculty**

Archer	Blundell
Chan	Ferguson
Forte	Horalek
Kerr	Kim
Lance	Lieb
MacIntyre	Martinez
Suffridge	Tordik
Vranas	Walker
Wood	Yingling

**Courses in endodontics**

ENDO 622 Principles of Endodontics  
 ENDO 731 Endodontic Therapy  
 ENDO 739-749 Clinical Endodontics

**Department of Oral Pathology****James C. Burns**

Professor and Department Chair (1978)  
 B.S. 1968 Virginia Military Institute  
 D.D.S. 1972 Medical College of Virginia of Virginia Commonwealth University  
 M.S.Ed. 1975 University of Southern California  
 Ph.D. 1979 Medical College of Virginia of Virginia Commonwealth University

Abbey, Louis M. (1971) Professor  
 A.B. 1963 Earlham College  
 D.M.D. 1967 Tufts University  
 M.S. 1971 Tufts University  
 Page, Dennis G. (1973) Associate Professor  
 A.B. 1963 Westminster College  
 D.D.S. 1967 University of Illinois  
 M.S. 1973 Loyola University  
 Svirsky, John A. (1976) Professor  
 B.A. 1969 University of Richmond  
 D.D.S. 1973 Medical College of Virginia of Virginia Commonwealth University  
 M.Ed. 1979 Virginia Commonwealth University

**Emeriti faculty**

Salley, John J., Professor Emeritus  
 D.D.S. 1951 Medical College of Virginia  
 Ph.D. 1954 University of Rochester  
 D.Sc. 1975 Boston University

**Courses in oral pathology**

ORPT 301 Dental Radiology (Dental Hygiene)  
 ORPT 324 Oral Pathology (Dental Hygiene)  
 ORPT 621 Dental Radiology  
 ORPT 622 Oral Pathology  
 ORPT 732 Clinical Oral Pathology and Oral Medicine  
 ORPT 737-747 Radiology Rotation

**Department of Oral and Maxillofacial Surgery****Daniel M. Laskin**

Professor and Department Chair (1984)  
 B.S. 1947 Indiana University  
 D.D.S. 1947 Indiana University  
 M.S. 1951 University of Illinois

Abubaker, A. Omar (1991) Associate Professor  
 B.D.S. 1975 University of Alexandria, Egypt  
 Ph.D. 1984 University of Pittsburgh  
 D.M.D. 1990 University of Pittsburgh  
 Campbell, Robert L. (1977) Professor of Oral and Maxillofacial Surgery and Anesthesiology  
 B.S. 1964 John Carroll University  
 D.D.S. 1968 Case Western Reserve University

Giglio, James A. (1981) Professor  
 B.A. 1964 La Salle College  
 D.D.S. 1968 University of Maryland  
 M.Ed. 1989 Virginia Commonwealth University  
 Hardigan, James E. (1975) Associate Professor and Associate Dean for Administrative Affairs  
 B.S. 1968 and M.B.A. 1970 Northeastern University  
 Ph.D. 1975 Cornell University  
 Strauss, Robert A. (1987) Associate Professor  
 B.S. 1975 and D.D.S. 1979 State University of New York, Buffalo

**Clinical faculty**

Alexander	Amrhein
Bissell	Cash
Cuttino	Cyr
Dolan	Fidler
Funari	Gibberman
Guter	Hartman
Hoard	Kenney
Lee, J.	Lee, N.R.
Miller	Murphy
Nelson	O'Neill
Peters	Pirok
Priest	Sellers
Smilek	Swanson
Tankersley	Watts
West	Whitney
Zoghby	

**Courses in oral surgery**

ORSG 622 Introduction to Oral Surgery  
 ORSG 731 Physical Evaluation and Principles of Medicine  
 ORSG 733 Principles of Oral and Maxillofacial Surgery  
 ORSG 739-749 Clinical Oral Surgery  
 ORSG 741 Special Patient Care

**Department of Orthodontics****Robert J. Isaacson**

Professor, Eminent Scholar and Department Chair (1987)  
 B.S. 1954 University of Minnesota  
 D.D.S. 1956 University of Minnesota  
 M.S.D. 1961 University of Minnesota  
 Ph.D. 1962 University of Minnesota

Britto, A. Denis (1998) Assistant Professor  
 B.D.S. 1987 and M.D.S. 1991 Bangalore University  
 D.D.S. 1996 Medical College of Virginia of Virginia Commonwealth University  
 M.S.D. Orthodontics 1998 Indiana University  
 Lindauer, Steven J. (1989) Professor  
 B.A. 1982 University of Pennsylvania  
 D.M.D. 1986 University of Connecticut  
 M.D.Sc. Orthodontics 1989 University of Connecticut  
 Revere Jr., James H. (1968) Assistant Professor and Executive Associate Dean for Academic Affairs  
 B.A. 1961 University of Richmond  
 D.D.S. 1965 Medical College of Virginia of Virginia Commonwealth University  
 Certificate Orthodontics 1988 Medical College of Virginia of Virginia Commonwealth University

**Clinical faculty**

Anderson	Brassington
Butterfoss	DuVall
Gardner	Gills
Kaplan	Wendell

**Courses in orthodontics**

ORTH 623 Orthodontics

ORTH 733 Orthodontic Therapy

ORTH 739 Clinical Orthodontics

**Department of Pediatric Dentistry****Frank H. Farrington**

Associate Professor and Department Chair (1977)

M.S. 1969 and D.D.S. 1965 Marquette University

Brownstein, Marshall P. (1975) Associate Professor and Assistant Dean for Admissions and Student Affairs

B.S. 1963 and D.D.S. 1967 University of Maryland

Maestrello, Christopher L. (1999) Assistant Professor

B.S. 1984 University of Richmond

D.D.S. 1988, Certificate Medical 1997 and Certificate Medical 1999 Medical College of Virginia of Virginia Commonwealth University

Mourino, Arthur P. (1974) Associate Professor

B.S. 1965 Georgetown University

M.S. 1967 Hofstra University

D.D.S. 1972 Georgetown University

M.S.D. 1974 Indiana University

Walton III, Martin L. (1998) Assistant Professor

B.A. 1968 Miami University, Ohio

D.D.S. 1974 Meharry Medical College

Certificate 1982 University of Maryland

**Clinical faculty**

Adams	Atkins
Avent	Barrett
Biery	Cox
Cook	Easterling
Gokli	Jones
Keeton	Nacht
Pearson	Pope
Schneider	Shetty
Sorensen	Vitsky
Witcher	

**Courses in pediatric dentistry**

PEDD 622 Introduction to Pediatric Dentistry

PEDD 733 Advanced Pediatric Dentistry

PEDD 739-749 Clinical Pediatric Dentistry

**Department of Periodontics****John A. Burmeister**

Associate Professor and Department Chair (1977)

B.A. 1965 Wittenberg University

D.D.S. 1970 Ohio State University

M.S. 1978 Medical College of Virginia of Virginia Commonwealth University

Abbott, David M. (1975) Associate Professor

B.S. 1968 Madison College

D.D.S. 1972 University of North Carolina

M.S.D. 1975 University of Minnesota

Butler, James H. (1974) Professor

B.A. 1958 Denison University

D.D.S. 1962 Ohio State University

M.S. 1967 University of Rochester

Califano, Joseph V. (1986) Associate Professor

B.A. 1979 Hofstra University

D.D.S. 1984 and Ph.D. 1990 Medical College of Virginia of Virginia Commonwealth University

Koertge, Thomas E. (1982) Associate Professor

B.A. 1975 Southern Illinois University

D.M.D. 1978 Southern Illinois University

Ph.D. 1984 University of Iowa

Rogers, Jeffrey D., Assistant Professor

B.S. 1990 University of Utah

D.D.S. 1993 Virginia Commonwealth University

Ph.D. 2000 SUNY at Buffalo

Schenkein, Harvey A. (1978) Paul Tucker Goad Professor of

Periodontics and Microbiology and Immunology and

Assistant Dean for Research

B.S. 1970 State University of New York

D.D.S. 1974 State University of New York

Ph.D. 1978 State University of New York

Waldrop, Thomas C. (1994) Associate Professor

B.S. 1969 University of Georgia

D.D.S. 1973 Medical College of Virginia of Virginia

Commonwealth University

M.S. 1978 University of Texas

Certificate 1978 Wilford Hall Medical Center

**Emeritus faculty**

Wiebusch, F. B., Professor Emeritus

B.B.A. 1943 University of Texas

D.D.S. 1947 University of Texas

**Clinical faculty**

Barco	Block
Chehade	Colasanto
Doswell	Faragehi
Garnick	Green
Griffin	Kaugars, C.
Kaurich	Lanning
Mackey	Maynard
Melvin	Miller
Moretti	Piche
Richardson	Ross
Slagle	Sweeney
Ziegler	

**Research assistant**

Williams

**Courses in periodontics**

PERI 326 Periodontics (Dental Hygiene)

PERI 329 Periodontics II (Dental Hygiene)

PERI 626 Periodontics I

PERI 629 Periodontics II

PERI 733 Periodontics III

PERI 739-749 Clinical Periodontics

**Department of Prosthodontics****John W. Unger**

Professor, Eminent Scholar and Department

Chair (1988)

A.A. 1968 Springfield Junior College

B.S. 1970 University of Illinois

D.D.S. 1972 University of Illinois

Certificate 1974 Prosthodontics

Beck, David A. (1980) Associate Professor

B.S. 1974 University of New Mexico

D.D.S. 1977 Baylor University

Certificate Prosthodontics 1980 VAMC Wood, WI

Burns, David R. (1985) Associate Professor

B.S. 1976 Lewis and Clark College

D.M.D. 1980 University of Oregon

Certificate 1985 Emory University

Coffey, James P. (1992) Associate Professor

B.S. 1977 University of Minnesota

D.D.S. 1982 University of Minnesota

M.S. 1984 University of Minnesota

Crabtree, Donald G. (1974) Assistant Professor

B.S. 1962 Muskingum College

D.D.S. 1966 Northwestern University

Certificate: Prosthodontics 1970 VAMC Los Angeles, CA

Douglas Jr., Hugh B. (1970) Associate Professor

B.S. 1966 College of William &amp; Mary

D.D.S. 1970 Medical College of Virginia of Virginia

Commonwealth University

M.S. 1974 University of North Carolina

Janus, Charles E. (1981) Associate Professor

B.S. 1974 Belmont Abbey College

D.D.S. 1978 Medical College of Virginia of Virginia

Commonwealth University

Kazanoglu, Altug (1980) Associate Professor

D.D.S. 1972 University of Istanbul, Turkey

M.S. 1976 University of Missouri, KC

Certificate 1977 University of Pittsburgh, PA

D.M.D. 1980 Washington University, MO

Lynde, Thomas A. (1992) Associate Professor

B.S. 1965 University of Texas, El Paso

D.D.S. 1969 St. Louis University

M.S. 1974 George Washington University

Certificate Prosthodontics 1975 Naval Graduate Dental School, Bethesda, Md.

Tsao, Ding H. (1975) Associate Professor

B.D. 1960 National Defense Medical Center, China

D.D.S. 1974 State University of New York

Ward, John E. (1976) Associate Professor

B.A. 1962 Hanover College

D.D.S. 1966 Indiana University

M.S.D. 1978 Indiana University

**Emeriti faculty**

Bell Jr., Dewey H., Professor Emeritus of Removable Prosthodontics

B.S. 1948 Wofford College

D.D.S. 1952 Medical College of Virginia

McCasland, John P., Associate Professor Emeritus

B.S. 1953 Howard Payne College

D.D.S. 1957 Baylor University

**Clinical faculty**

Bui	Cormier
Covaney	Jenkins
Khaef	Muncy
Sadr	Stewart

**Courses in prosthodontics**

PROS 622 Preclinical Fixed Prosthodontics  
 PROS 623 Preclinical Complete Denture Prosthodontics  
 PROS 624 Preclinical Removable Prosthodontics  
 PROS 627 Diagnostic Impression Lab  
 PROS 731 Complete Denture Prosthodontics  
 PROS 735 Removable Partial Denture — Lecture  
 PROS 737 Prosthodontics Diagnosis and Treatment Planning  
 PROS 739-749 Clinical Removable Prosthodontics  
 PROS 739-749 Clinical Fixed Prosthodontics  
 PROS 745 Clinical Principles of Fixed Pros

**Conjoint courses**

DENS 510 Scientific Inquiry  
 DENS 511 Dentistry and Education  
 DENS 601 Patient Management  
 DENS 621 Occlusion  
 DENS 625 Clinical Skills  
 DENS 733 Geriatric Dentistry (Dental and Dental Hygiene)  
 DENS 735 Records Management  
 DENS 741 Head and Neck Pain  
 DENS 745 Records Management



# School of Education

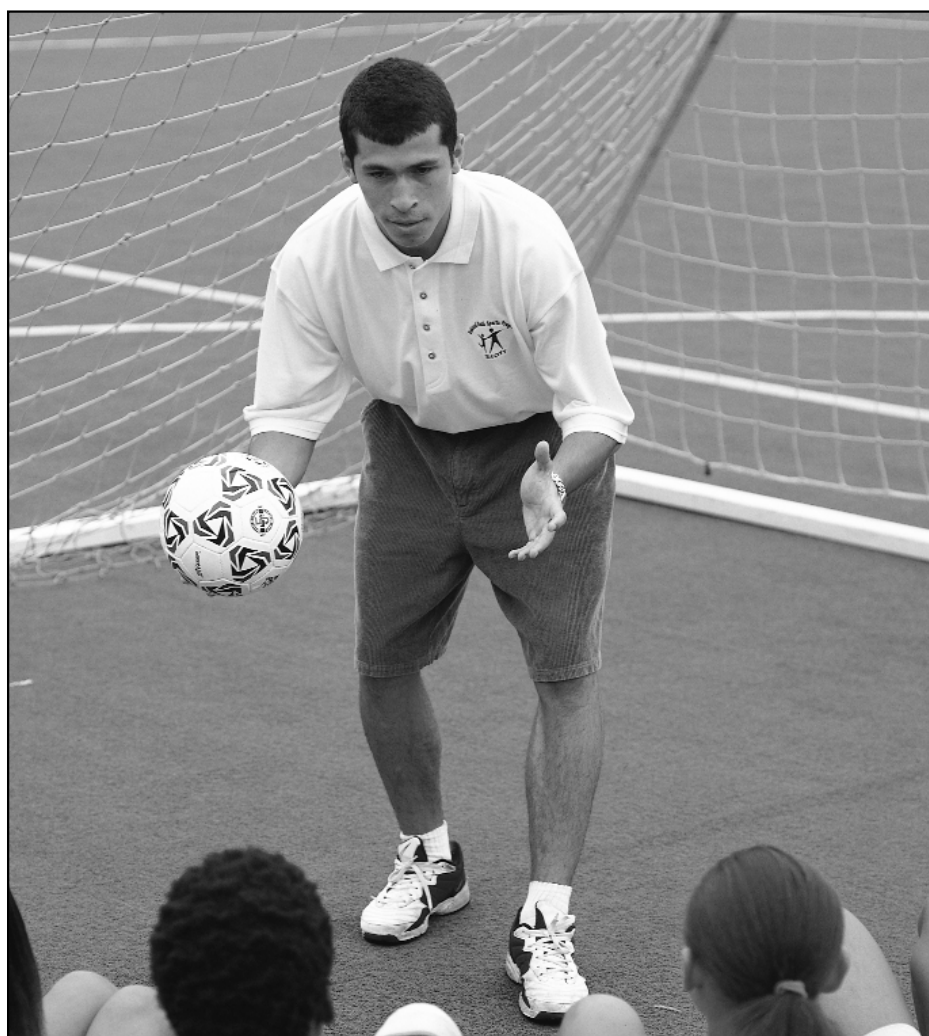
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## Undergraduate Programs and Specializations

Extended Teacher Preparation Program B.A. or B.S. and M.T.
early childhood/elementary education (P-6)
middle education (6-8)
secondary education (6-12)
special education (K-12)
Four-Year Program B.S.
Health Education
athletic training
community wellness
kinesiotherapy
teacher education
Recreation, Parks and Tourism
recreation and park management
sport management
therapeutic recreation
travel and tourism



**The School of Education prides itself on the preparation it offers students who are seeking employment as teachers or administrators in schools or careers in human and community services. The school provides a diverse curriculum to expose its students to the wide range of needs of the communities they will serve. Each program is designed to prepare competent teachers and professionals to make informed decisions about the ever-changing educational process.**

1015 W. Main St.  
P.O. Box 842020  
Richmond, VA 23284-2020  
(804) 828-3382 • Fax (804) 828-1323  
[www.vcu.edu/eduweb](http://www.vcu.edu/eduweb)

**John S. Oehler Jr.**

Dean and Professor of Education (1970)  
B.A. Davidson College  
M.A.T. University of North Carolina  
Ed.D. 1973 University of North Carolina

**Diane J. Simon**

Associate Dean and  
Associate Professor of Special Education (1988)  
B.S. Hampton University  
M.A. New York University  
Ph.D. 1981 New York University

**Thomas A. Hephner**

Director, Continuing Education and Associate  
Professor of Education (1976)  
B.S. 1958 Kent State University  
B.S. Ohio State University  
M.S. Ohio State University  
Ph.D. 1972 Ohio State University

The School of Education provides professional preparation for students planning to teach in schools or seek careers in human and community services. All programs combine comprehensive studies in the liberal arts and sciences with professional preparation and concentration in specialized fields of study. Practical applications and field experiences are an integral part of these programs. Each program is designed to contribute to the personal and professional growth of the prospective professional.

## Teacher education programs

### Bachelor's degree programs in education

The School of Education awards a bachelor of science degree in health, physical education and exercise science that offers a program of study in teacher education. The School of the Arts offers a bachelor of arts degree in art education and theatre education as well as a bachelor of music education degree. All other programs include a bachelor of arts or a bachelor of science degree from the College of Humanities and Sciences and a master of teaching degree from the School of Education.

### Extended teacher preparation programs

The School of Education offers extended teacher preparation programs in early childhood/elementary, middle, secondary and special education. Five-year courses of study, these programs culminate in the simultaneous awarding of both a bachelor's degree from the College of Humanities and Sciences and a master's degree from the School of Education.

A student who enters one of these programs must select an undergraduate major in the College of Humanities and Sciences. These curricula also include professional education course work. A full description of these programs appears in the Division of Teacher Education section. Students in the program are expected to obtain a student account with Academic Campus Computing in Cabell Library.

### Recreation and exercise science programs

#### Bachelor of science programs

The school awards the bachelor of science degree in recreation, parks and tourism, and the bachelor of science degree in health, physical education and exercise science. Within each of these programs, distinct professional specialties exist. Several of the specialties have been designed to meet the criteria for professional certification in a variety of employment fields.

### Mission

The School of Education is committed to excellence in the initial preparation and continuing development of professionals for leadership, teaching, service and scholarly inquiry in culturally diverse settings across the life span. The school emphasizes early childhood through secondary education and lifelong learning; scholarship that extends knowledge and improves practice; and collaboration that connects the school to the field of practice and supports schools and relevant educational and human service agencies.

The School of Education, as an integral part of a major urban research university, subscribes to and promotes the following values:

1. The school as an example of the highest quality teaching and learning.

2. The school as a diverse community of learners and scholars who, guided by democratic principles of participation, demonstrate a commitment to:
  - a. high professional standards and sustained faculty development.
  - b. a collaborative approach to teaching, scholarship and service both within and across disciplines.
  - c. inquiry that results in the scholarship of application, integration and teaching as well as the scholarship of discovery.
  - d. nurturing national and international relationships.
3. The school as a leader providing quality education for students with individual and diverse needs. The school's graduates:
  - a. demonstrate a body of knowledge from a foundational core appropriate to their specialization(s) and
  - b. exhibit values and behaviors appropriate for effective professional practice in a democratic society.
4. The school as a partner with public and school communities in addressing today's educational challenges.

## Degree programs

Responsibility for the programs of study lies with the three divisions in the School of Education as follows:

- I. Division of Educational Studies
  - educational foundations
- II. Division of Health, Physical Education and Recreation
 

B.S. in Health, Physical Education and Exercise Science

  - athletic training
  - community wellness
  - kinesiotherapy
  - teacher education

B.S. in Recreation, Parks and Tourism

  - recreation and park management
  - sport management
  - therapeutic recreation
- III. Division of Teacher Education
 

Extended programs

  - early childhood/elementary education, P-6
  - middle education, 6-12
  - secondary education, 8-12
  - special education, K-12
  - post-baccalaureate certificate in teaching



## General degree requirements

Descriptions of individual degree programs on the following pages specify the particular courses necessary to fulfill program and degree requirements. In addition to a strong foundation in liberal arts and sciences, all programs require professional education and clinical experience.

**Four-year program.** A student in one of the four-year teacher preparation programs must maintain a minimum cumulative GPA of 2.5 to be eligible to participate in clinical experiences, and must complete a minimum of 129 credits. A student in one of the four-year non-teacher preparation programs must maintain a GPA established by the specific program to be eligible to participate in field practica and internships.

**Extended program.** A student in any one of the four extended teacher preparation programs must complete a minimum of 160<sup>1</sup> credits. The student must maintain a cumulative GPA of 2.5 for admission to the teacher preparation program, and upon completion of at least 90 credits, a minimum cumulative GPA of 2.8 is required for that student to be admitted to the graduate studies portion of the extended program.

A post-baccalaureate certificate in selected teaching shortage areas is open primarily to those who have already earned a master's degree. The candidate must complete at least 24 additional hours beyond the bachelor's level. Admittance to this program requires a minimum cumulative GPA of 2.75.

## Faculty advisement

**Four-year program.** A degree-seeking student enrolled in a four-year program is assigned a faculty adviser in the Division of Health, Physical Education and Recreation for programs in athletic training, community wellness, kinesiotherapy, teacher education in health and physical education, recreation and park management, sport management and therapeutic recreation, or in the School of the Arts for programs in art, music or theatre education.

**Extended programs.** A student enrolled in an extended teacher preparation program is assigned a professional

studies adviser in the School of Education and an adviser in the academic major of the College of Humanities and Sciences.

**All programs.** Although advisers will provide timely and accurate assistance, the student is ultimately responsible for satisfying degree requirements in a given academic program. Students in the School of Education are expected to obtain a student account through Academic Campus Computing so that they may access students and faculty through electronic mail. This means of communication can enhance advising when student and faculty schedules are at variance.

## Cooperative education

A qualifying student in the School of Education who is pursuing a degree in teacher preparation may apply to the Cooperative Education Program. A full description of the program appears in Part XX of this bulletin.

## Change of major and transfer students

**Four-year programs.** A student with a minimum GPA of 2.0 can transfer to a four-year program in the School of Education from another school in the university. Change of Major forms are available from Office of Records and Registration. A transfer student with a minimum GPA of 2.0 also is eligible to become a degree-seeking student in a four-year program in the School of Education. Both change of major and transfer students must meet criteria for admission to teacher preparation.

It must be noted, however, that a minimum GPA of 2.5 is required for admission to clinical experiences.

**Extended programs.** Students wishing to enter the Extended Teacher Preparation Program must transfer initially to the College of Humanities and Sciences, declaring a major in one of the college's departments and a specialization in the appropriate professional studies sequence in the School of Education.

For admission to teacher preparation, a minimum GPA of 2.5 is required. A minimum GPA of 2.8 is required for admission to the graduate phase of the Extended Teacher Preparation Program.

## Transcript evaluation

**Four-year programs.** For the four-year program, the Division of Health, Physical Education and Recreation evaluates its prospective students' transcripts for change of major and transfer; the School of the Arts evaluates its prospective students' portfolios and transcripts. For the four-year program, a student must present at least 30 semester hours of acceptable course work to be admitted to the Teacher Preparation Program.

**Extended program.** The College of Humanities and Sciences evaluates transcripts of all other students pursuing teacher preparation programs. Credits are accepted if they conform with specific program guidelines; course equivalents from accredited colleges and universities are accepted if the grade earned is "C" or better. For the extended program, 60 semester hours of acceptable undergraduate course work are required to be admitted to a teacher preparation program. See specific criteria under the "Admission to the Extended Teacher Preparation Programs" heading in this section.

Credits accepted from two-year institutions may meet liberal arts and sciences requirements, but will not meet professional requirements considered upper-division course work. The VCU Transfer Guide for Virginia Community Colleges lists, in full, credits accepted by VCU, but earned in one of the state's community colleges.

After the initial student transcript evaluation, the assigned adviser reviews the accepted transfer credits with the student, determining what additional course work at VCU will be necessary. An adviser is not required to use all the accepted transfer credits in a student's program of study. Only those credits approved for transfer can be applied toward the chosen degree.

## Teacher licensure

Upon completion of degree requirements in any of VCU's teacher preparation programs and with the recommendation of the School of Education, students are eligible to receive initial teacher licensure from the Virginia State Department of Education. For additional information on licensure, licensure renewal or an add-on endorsement, contact the School of Education's Office of Academic Services.

<sup>1</sup> Students in the 120-credit B.A. or B.S. programs in the College of Humanities and Sciences complete a 156-credit program.

In Virginia, initial licensure requires successful completion of the Praxis Examinations. Applicants for initial licensure must take the Praxis I Examination and Praxis II Specialty Area Test in the endorsement area in which licensure is sought. In fields where the specialty exam is not available, only the Praxis I test is required of licensure candidates. Praxis I should be taken prior to application for admission to Extended Teacher Preparation Program; the specialty examination should typically be taken in one's final semester.

Students should request that their Praxis I and Praxis II Specialty Area Test scores be reported to VCU and the Virginia Department of Education.

Before a recommendation for licensure can be sent to the Teacher Licensure Division of the Virginia Department of Education, these test scores must be on file with the School of Education's Office of Academic Services.

An undergraduate degree holder in another field wishing to obtain teacher licensure should contact the School of Education's Office of Academic Services.

### Approved programs and certification reciprocity

All of VCU's initial teacher preparation programs are approved by the Virginia Department of Education and accredited by the Southern Association of Colleges and Schools and the National Council for Accreditation of Teacher Education. VCU's School of Education also holds membership in the American and Virginia Associations of Colleges of Teacher Education and the Holmes Partnership.

Based on the National Association of State Directors of Teacher Education and Certification agreement, VCU graduates can receive teacher licensure reciprocity with other states. Students interested in licensure reciprocity should contact the School of Education's Office of Academic Services.

### Resources

The School of Education has developed various resources to provide support services to students, faculty and the academic programs. These

resources are the Office of Academic Services, the Office of Continuing Education and the Instructional Technology Center, which houses state-of-the-art computer laboratories.

### Office of Academic Services

Basic information on the School of Education's degree programs as well as all forms needed by students as they advance through the programs, are available at the Office of Academic Services.

This office also receives and processes various School of Education application forms and supplies information on the Praxis I Examination, Praxis II Specialty Area Tests, Graduate Record Examination and the Miller Analogies Test.

This office coordinates clinical placements for students in practica, student teaching, internships and externships. Student teachers and graduate intern teachers are placed primarily in school divisions and other educational facilities in the greater Richmond metropolitan area.

**Scholarship applications** and information available to School of Education students can be obtained at the Office of Academic Services. Information on financial aid administered by the university is found in Part III of this bulletin.

**Licensure and endorsement** information, materials and applications for Virginia education personnel are available in the Office of Academic Services. Licensure and endorsement are based in part on the successful completion of an approved program that complies with national standards.

### Instructional Technology Center

The Instructional Technology Center, a multimedia facility, is used by faculty and students in the School of Education. The workshop houses microcomputers with sophisticated graphics capabilities, educational software and many similar resources for the development of instructional materials. It also provides computer access to the School of Education's Local Area Network (EDUNET), VCU Libraries, and the campus Local Area Network and the Internet.

### Computer laboratories

The Computer Laboratory, housed in the Instructional Technology Center, gives students many opportunities to learn about computer-assisted instruction in the classroom setting. It also lends support to students enrolled in the computer science basic literacy course and other computer courses offered by the school. The laboratory equipment includes Macintosh and IBM-compatible multimedia computers. Laptop computers, laser printers, color laser printers and scanners also are available.

A university computer laboratory open to all students is housed in Oliver Hall. The laboratory is equipped with IBM- and Mac-compatible computers that permit students to access the Internet.

### Organization

The chief administrative office for the School of Education is the Office of the Dean.

The school itself is separated into three divisions: the Division of Health, Physical Education and Recreation, the Division of Teacher Education, and the Division of Educational Studies. Detailed requirements for each of the programs in these divisions are outlined on the following pages.

Organized for the management of instruction and degree programs, these divisions are headed by a chairperson, while faculty assume responsibility for curriculum and advise by program cores.

### Division of Health, Physical Education and Recreation

#### Beverly J. Warren

Professor and Division Chair (2000)  
B.S. University of North Carolina, Greensboro  
M.S. Southern Illinois University  
Ed.D. University of Alabama  
Ph.D. 1990 Auburn University

Borden, George L. (1975) Instructor  
and Director of Sports Medicine  
B.S. Virginia Commonwealth University  
M.S. Virginia Commonwealth University

Davis, Robert G. (1973) Professor  
B.S. Westchester State College  
M.Ed. Pennsylvania State University  
Ph.D. 1973 University of Maryland

Gayle, Richard C. (1986) Associate Professor  
B.S. College of William and Mary

- M.S. University of Tennessee  
Ed.D. 1979 University of Tennessee
- Getty, Deborah (1982) Assistant Professor  
and Program Head, Teacher Education  
B.S. State University of New York, College at Cortland  
M.S. University of Arizona  
Ph.D. 1996 University of California, Berkeley
- Groves, Barney R. (1970) Professor  
and Program Head, Exercise Science  
B.S. Southeastern State College  
M.S. Oklahoma University  
Ph.D. 1965 Florida State University
- Jones, Daniel W. (1999) Assistant Professor  
B.A. Fairmont State College  
M.A. Case Western Reserve University  
Ph.D. University of Toledo, Ohio
- Malone, Laurie (1998) Assistant Professor  
B.A. California State University, Long Beach  
M.S. University of Oregon  
Ph.D. 1999 University of Alberta
- Mills, Allan S. (1987) Associate Professor  
B.S. University of Montana  
M.S. University of Minnesota  
Ph.D. 1975 University of Minnesota
- Poindexter, J. Rodney (1998) Assistant Professor  
B.A. North Carolina State University  
M.Ed. and Ed.D. 1995 University of Nevada, Las Vegas
- Ready, Keith F. (1976) Associate Professor  
B.S. Massachusetts State College  
M.A. Miami University  
Ph.D. 1981 Michigan State University
- Reynolds, Ronald P. (1978) Professor  
B.S. State University of New York, Cortland  
M.S. University of Illinois, Urbana-Champaign  
Ph.D. 1973 University of Illinois, Urbana-Champaign
- Richardson, Joann (1998) Assistant Professor of Health  
B.S. and M.S. Old Dominion University  
Ph.D. 1993 Medical College of Virginia  
of Virginia Commonwealth University
- Schiltz, Jack H. (1969) Professor  
B.S. Southern Illinois University  
M.S. Southern Illinois University  
Ed.D. 1968 Columbia University
- Smith, Robin McCollough (1994) Assistant Professor  
B.S. Indiana University  
M.S. George Washington University  
Ed.D. 1985 Indiana University
- Wise, Michael S. (1972) Associate Professor  
and Program Head, Recreation, Parks and Tourism  
B.S. North Carolina State University  
M.S. Indiana University  
Ed.D. 1972 University of Georgia

#### Emeriti faculty

George Dintiman Charles E. Hartsoe  
LeEtta Pratt

The Division of Health, Physical Education and Recreation offers two undergraduate degree programs: Bachelor of Science in Health, Physical Education and Exercise Science and

Bachelor of Science in Recreation, Parks and Tourism. Each of these degree programs provides students with options concerning the program of study they choose to pursue. Those options are listed below and will be described in greater detail under the specific headings.

#### Bachelor of Science in Health, Physical Education and Exercise Science

Athletic Training  
Community Wellness  
Kinesiotherapy  
Teacher Education in Health and Physical Education

#### Bachelor of Science in Recreation, Parks and Tourism

Recreation and Park Management  
Sport Management  
Therapeutic Recreation

#### Faculty adviser

After a student is admitted to the university and declares a major in one of the program areas, a faculty member in the Division of Health, Physical Education and Recreation is assigned to advise the student regarding the selected program. Although advisers will provide timely and accurate assistance, the student is responsible for satisfying degree requirements.

#### Computer account

All students are expected to obtain a personal computer account and an e-mail address through University Computing Services that will enable them to communicate through electronic mail with their advisers and course instructors.

Applications for computer accounts and e-mail addresses can be submitted at the Customer Service window located in Cabell Library, Room B-9 or via the Web.

— — — [www.vcu.edu/vcsac/accounts.html](http://www.vcu.edu/vcsac/accounts.html)

#### Health, physical education and exercise science programs

##### Athletic Training Program

Students who are interested in pursuing the Athletic Training Program of study must complete an application to the Athletic Training Educational Program (ATEP) in addition to the application for admission to the university.

#### Application Process

Application forms for the Athletic Training program are available in the Division Office of Health, Physical Education and Recreation, Franklin Street Gym, 817 W. Franklin St., Room 221 or via the Web.

— — — [www.wcb.vcu.edu/wcb/schools/SOE/PATP/](http://www.wcb.vcu.edu/wcb/schools/SOE/PATP/)

Applications should be sent to the Athletic Training Program Director, P.O. Box 842037, VCU, Richmond, VA 23284-2037.

The following also should be forwarded to the athletic training program director:

- a letter to the director stating your reasons for wanting to pursue a degree in Athletic Training,
- for incoming freshmen, official high school transcripts. For transfer and change of major students, an official copy of all transcripts; a minimum GPA of 2.5 is required,
- three letters of recommendation,
- proof of a valid First Aid and CPR cards,
- evidence of immunization for Hepatitis B,
- proof of health examination from physician which verifies that the student can safely meet the physical and technical skills required by a student athletic trainer.

In addition, students must schedule an interview with the athletic training program director who can be reached at (804) 828-1948.

The selection of students for the ATEP is competitive, but is open until all available positions in each class are filled.

#### GPA

Students admitted to the ATEP must maintain a 2.5 GPA in their program of study.

#### Certification

Students who successfully complete the ATEP are required to pass an entry-level examination administered by the National Athletic Trainers' Association Board of Certification (NATABOC) to become a Certified Athletic Trainer. All applicants for NATABOC certification must be graduates of an accredited program by the year 2004. The commonwealth of Virginia, by the year 2002, will require

state certification to serve as an athletic trainer.

ATEP has been accepted to Candidacy by the Commission on Accreditation of Allied Health Education Programs (CAAHEP); however, candidacy is not accreditation nor is it a guarantee that the program will be accredited.

### Program of study: Athletic Training

General education	Credits
ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Oral communication elective	3
American studies elective	3
Global studies elective	3
PSYC 101 Introduction to Psychology	4
Social sciences elective	3
Humanities or social sciences elective	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
CMSC 128 Computer Concepts and Applications or three credits from INFO 160 through 168	3
BIOL 101, 101L Life Science and Laboratory	4
Visual and performing arts elective(s)	2
BIOL 205 and BIOL 205L Human Anatomy	4
BIOL/PHIS 206 and BIOL/PHIS 206L Human Physiology	4
	<hr/>
	45

### General electives

#### Health and physical education

HLTH 400 Nutrition	3
HLTH 386 School and Community Health Resources	3
HI-TH 420 Substance Abuse	3
HLTH 430 Trends in Modern Diseases	3
HLTH 480 Safety, First Aid and CPR	3
HLTH 487 Coping and Adaptation	3
PHED 200 Strength Training	1
PHED 392 Kinesiology	3
PHED 430 Sport Psychology	3
PHED 492 Physiology of Exercise	3
	<hr/>
	28

#### Professional core

HLTH 225/225L Introduction to Athletic Training and Laboratory	4
HLTH 226 Pathology and Pharmacology	3
HLTH 326/326L Upper Extremity Assessment and Laboratory	4
HLTH 327/327L Lower Extremity Assessment and Laboratory	4
HLTH 329/329L Therapeutic Exercise and Laboratory	4
HLTH 338/338L Therapeutic Modalities and Laboratory	4
HLTH 421 Athletic Training Administration	3
	<hr/>
	26

#### Clinical experience

HLTH 393 Clinical Experience I	4
HLTH 395 Clinical Experience II	4
HLTH 494 Clinical Experience III	4
HLTH 496 Clinical Experience IV	4
	<hr/>
	16

#### Total credits

#### Athletic Training: Pre-physical Therapy option

For athletic training students interested in pursuing graduate study in physical therapy, the following courses should be taken in addition to the courses specified in the above program of study:

General education	credits
Literature Elective	3
Psychology Elective	3
STAT 210 Basic Practice of Statistics	3

#### PPT professional core

BIOL 102 Science of Heredity or BIOL 152 Introduction to Biological Science I	3
BIOL 102L Science of Heredity Laboratory or BIOL 152L Introduction to Biological Science Lab II	1
CHEM 101 General Chemistry	4
CHEM L101 General Chemistry Lab	1
CHEM 102 General Chemistry	4
CHEM 102L General Chemistry Lab	1
PHYS 201 General Physics	4
PHYS 201L General Physics Lab	1
PHYS 202 General Physics	3
PHYS 202L General Physics Lab	1

#### Athletic Training: Pre-medicine option

For athletic training students who are interested in pre-medicine, the following courses should be taken in addition to the requirements listed in the athletic training program of study:

General education	credits
**MATH 141 or equivalent Algebra (replaces MATH 131)	3
**BIOL 151 Introduction to Biological Science I (replaces BIOL 101)	3
**BIOL 151L Introduction to Biological Science I Lab (replaces BIOL 101L)	1

#### Pre-medicine core

**BIOL 152 General Biology	3
**BIOL 152L General Biology Lab	1
**MATH 151 Pre-calculus	4
**CHEM 101 General Chemistry	4
**CHEM 101L General Chemistry Lab	1
**CHEM 102 General Chemistry	4
**CHEM 102L General Chemistry Lab	1
**CHEM 301 Organic Chemistry	3
**CHEM 301L Organic Chemistry Lab	1
**CHEM 302 Organic Chemistry	3
**CHEM 302L Organic Chemistry Lab	2

**Physics — one of the following group:	8
PHYS 201 Physics	4
PHYS 201L Physics Lab	0
PHYS 202 Physics	4
PHYS 202L Physics Lab	0

#### Other recommended pre-medical courses

BIOL 218 Cell Biology	3
BIOL 311 Animal Physiology (Prerequisite: PHYS 218)	3
CHEM 403 Biochemistry (Prerequisites: CHEM 301 and 302)	3

\*\* These courses must be completed prior to taking the MCAT exam.

### Community wellness, kinesiotherapy and teacher education

Students who pursue programs in community wellness, kinesiotherapy, and teacher education follow the outlined series of steps to meet program expectations.

#### Step 1: Admission to Professional or Teacher Education Preparation Program

Students should apply for admission during the semester of their 45th credit hour and meet the following requirements.

##### Requirements

- 2.5 GPA or better
- Successful completion of
  - 6 hours of English
  - 4 hours of laboratory science
  - 3 hours of math
  - 6 hours of social science
- Students in Teacher Education must obtain passing scores on the Praxis Examination I: PPST Subtests (Obtain information from the Office of Academic Services in Oliver Hall, 1015 W. Main St., Room 2087)

##### Procedures

- Complete Admission to Professional Preparation or Admission to Teacher Education form (obtain from Office of Academic Services)
- Request VCU transcript (obtain from Office of Records and Registration).
- Return completed form with VCU transcript to Office of Academic Services

**Note:** Students not admitted will be informed and asked to consult with their adviser for counseling. Students must be admitted to Professional Preparation or Teacher Preparation in order to be eligible for practicum placement.

#### Step 2: Admission to practicum experience

Students must meet the following requirements to enroll in TEDU 310.

##### Requirements

- 2.5 GPA or better
- Admission to Professional Preparation or Teacher Preparation

- c.) Completion of HLTH/PHED 310, if required in program of study.

**Recommendation:**

- Students should meet with advisers at the beginning of practicum to plan remaining course work through graduation.

**Step 3: Admission to supervised field experience or student teaching placement**

Deadline for application is early in the preceding spring/fall semester prior to enrolling in placement check with Office of Academic Services for deadline dates.

**Requirements**

- 2.5 overall GPA and 2.5 GPA in professional course work
- Prior admission to the Professional Preparation or completion of Practicum (TEDU 310) with a grade of "C" or better.
- Successful completion of all professional course work prior to placement

**Procedures**

- Complete application for Field Experience or Student Teaching Form (obtain from Office of Academic Services)
- Request VCU transcript (obtain from Office of Records and Registration; allow two weeks)
- Review completed application with adviser and obtain adviser's signature
- Submit completed application packet (to supervisor of student teaching within the department.)

**Community Wellness Program**

The community wellness program of study prepares students for health-related careers in private, public, medical and corporate sectors. A 2.0 cumulative GPA is required for entry into the community wellness program and a 2.5 cumulative GPA is a prerequisite for placement in practicum and supervised field experience.

**Program of study:  
Community Wellness**

General education	credits
ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Oral communication elective	3
American studies elective	3
Global studies elective	3
Psychology elective	3
Social sciences elective	3
Psychology elective	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
STAT 208 Statistical Thinking or equivalent	3
CMSC 128 Computer Concepts and Applications	
Or 3 credits from INFO 160, 161, 162, 165, 166, 168 or 169	3

BIOL 101, 101L Life Science and Laboratory	4
Visual and performing arts elective(s)	2
	39

**Health and physical education**

HLTH/PHED 190 History and Philosophy of Health and Physical Education	3
HLTH/PHED 493 Tests and Measurements in Health and Physical Education	3
HLTH/PHED386 School and Community Health Resources	3
HLTH 400 Nutrition	3
HLTH 480 Safety, First Aid and CPR	3
Select three of the following seven courses	9
HLTH 325 Treatment of Athletic Injuries (3)	
HLTH 410 Issues in Sexuality (3)	
HLTH 420 Substance Abuse (3)	
HLTH 430 Trends in Modern Diseases (3)	
HLTH 487 Coping and Adaptation (3)	
PHED 431 Seminar in Fitness Programs (3)	
PHED 495 Adaptive Physical Education (3)	
PHED 200 Strength Training	1
PHED 201 Endurance and Flexibility	1
PHED 392 Kinesiology	3
PHED 492 Physiology of Exercise	3
	32

**Professional core**

BIOL 205, 205L Human Anatomy and Laboratory	4
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4
Additional related professional core courses selected with adviser	15
	23

**Clinical experience**

HLTH/PHED 310 Early Professional Experience	1
TEDU 310 Practicum*	3
TEDU 487 Supervised Nonschool Experiences I	6
TEDU 488 Supervised Nonschool Experiences II	6

**General electives**

19

**Total credits**

129

**Kinesiotherapy**

The kinesiotherapy program prepares students for certification for clinical practice by the American Kinesiotherapy Association, which is approved by the American Medical Association. The program also offers options for students who are interested in pursuing graduate study in physical therapy and occupational therapy.

To be admitted to the kinesiotherapy program, a student must successfully complete the interview process. Once

admitted to the program a student must maintain a 2.5 cumulative GPA and a 2.5 GPA in the major. All core courses must be completed prior to the supervised field experiences.

**Program of study: Kinesiotherapy**

General education	credits
ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Oral communication elective	3
American studies elective	3
Global studies elective	3
PSYC 101 Introduction to Psychology	4
PSYC 304 Life Span Developmental Psychology	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
STAT 208 Statistical Thinking or equivalent	3
CMSC 128 Computer Concepts and Applications or three credits from INFO 161 through 168	3
BIOL 101, 101L Life Science and Laboratory	4
Visual and performing arts elective(s)	2
	37

**Health and Physical Education**

HLTH/PHED 190 History and Philosophy of Health and Physical Education	3
HLTH 300 Introduction to Health Education	3
HLTH 325 Treatment of Athletic Injuries	3
HLTH 325L Taping Techniques Laboratory	1
HLTH 382 Introduction to Driver Education	3
HLTH 425 Advanced Treatment of Athletic Injuries	3
HLTH 426 Therapeutic Modalities	3
HLTH 482 Methods in Driver Education	3
HLTH 487 Coping and Adaptation	3
PHED 200 Strength Training	1
PHED 201 Endurance and Flexibility	1
PHED 392 Kinesiology	3
PHED 492 Physiology of Exercise	3
	33

**Professional core**

BIOL 205, 205L Human Anatomy and Laboratory	4
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4
CHEM 103 Introduction to Modern Chemistry or CHEM 110 Chemistry and Society	3
PHYS 101 Foundations of Physics or PHYS 107 Wonders of Technology	3
HLTH 480 Safety, First Aid and CPR	3
PHED 330 Motor Behavior A	3
PHED 401 Clinical Applications in Exercise Science	3
PHED 402 Exercise Intervention in Exercise Science	3
PHED 495 Adaptive Physical Education	3
RECR 403 Management of Park and Recreation Agencies	3
PSYC 401 Physiological Psychology	3
PSYC 407 Psychology of the Abnormal	3

**Clinical experiences**

TEDU 310 Practicum	3
PHED 487 Supervised Field Experience I	6
PHED 488 Supervised Field Experience II	6
	<hr/>
	15

**General electives**

6

**Total credits**

129

**Kinesiotherapy: Pre-occupational Therapy option**

Kinesiotherapy students who are interested in pursuing graduate study in occupational therapy must meet additional course requirements. The pre-occupational therapy option requires the completion of 133 total credit hours and requires the inclusion of the following courses in addition to those listed in the above program of study:

**General education**

credits

STAT 210 (not STAT 208)	3
SOCY 101 General Sociology	3
Sociology elective	3

**Kinesiotherapy: Pre-physical Therapy option**

For kinesiotherapy students who are interested in pursuing graduate study in physical therapy, there are additional course requirements. The pre-physical therapy focus requires 141 credit-hours and these must include the following courses in addition to requirements specified in the kinesiotherapy program of study:

**General education**

credits

STAT 210 (not STAT 208)	3
students may substitute BIOL 151 and 151L for BIOL 101 and 101L	

**PPT professional core**

BIOL 102/102L or BIOL 152/152L	4
PHYS 201/201L Physics	4
PHYS 202/202L Physics	4
CHEM 101/101L General Chemistry I	4
CHEM 102/102L General Chemistry II	4

**Teacher Education**

The teacher education program in health and physical education prepares students for positions in school settings where state teacher licensure is required. Completion of the program makes the student eligible for licensure

by the commonwealth of Virginia in health and physical education.

**Program of study: Teacher Education****General education**

credits

ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Oral communication elective	3
American studies elective	3
Global studies elective	3
Social sciences elective	3
Social sciences elective	3
Humanities or social sciences elective	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
CMSC 128 Computer Concepts and Applications or three credits from INFO 160 through 168	3
BIOL 101, 101L Life Science and Laboratory	4
Visual and performing arts elective(s)	1
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	35

**Physical education core**

PHED 190 History and Philosophy of Health and Physical Education	3
PHED 330 Motor Behavior	3
PHED 391 Elementary Physical Education for Physical Education Teachers	3
PHED 392 Kinesiology	3
PHED 432 Movement Education	3
PHED 433 Psychosocial Aspects of Sport and Physical Activity	3
PHED 492 Physiology of Exercise	3
PHED 493 Tests and Measurements in Health and Physical Education	3
PHED 495 Adaptive Physical Education	3
	<hr/>
	27

**Health education core**

HLTH 480 Safety, First Aid and CPR	3
Select five of the following six:	15
HLTH 386 School and Community Health Resources (3)	
HLTH 400 Nutrition (3)	
HLTH 410 Issues in Sexuality (3)	
HLTH 420 Substance Abuse (3)	
HLTH 430 Trends in Modern Diseases (3)	
HLTH 487 Coping and Adaptation (3)	
	<hr/>
	18

**Professional education core**

EDUS 300 Foundations of Education	3
EDUS 301 Human Development and Learning	3
BIOL 205, 205L Human Anatomy and Laboratory	4
BIOL/PHIS 206, 206L Human Physiology and Laboratory	4
PHED 397 Methods in Health and Physical Education	3

PHED 398 Curriculum in Health and Physical Education

3

20

**Professional activity core**

PHED 200 Strength Training	1
PHED 201 Endurance and Flexibility Training	1
PHED 230 Gymnastics	1
PHED 234 Elementary Rhythmic	1
PHED 235 Social Rhythmic	1
RECR 300 Wilderness Education I	1
Team sport (select three credits)	3
PHED 202 Basketball (1)	
PHED 204 Softball (1)	
PHED 208 Volleyball (1)	
PHED 210 Field Hockey (1)	
PHED 212 Soccer (1)	
Individual/dual/recreational sports (select 3 credits)	3
PHED 214 Wrestling/Flag Football (1)	
PHED 216 Tennis (1)	
PHED 226 Recreational Sports/Indoor Racquet Sports (1)	
PHED 227 Archery/Badminton/Bowling (1)	
PHED 233 Track and Field (1)	

12

**Clinical experiences**

PHED 310 Early Professional Experience	1
PHED 494 Topical Seminar or other approved professional experience	1
TEDU 310 Practicum*	3
TEDU 485 Directed Student Teaching 1: Elementary Physical Education	6
TEDU 486 Directed Student Teaching II: Middle/Secondary Physical Education	6
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	17

**Total credits**

129

**Recreation, parks and tourism programs**

The programs in recreation, parks and tourism prepare individuals for exciting professional careers in various recreation and sport settings. Employment opportunities are found in hospital and other health-care settings, community-based therapeutic recreation programs, public park and recreation agencies, commercial recreation businesses, sport complexes, campus and military operations, nonprofit agencies, and tourism operations.

Three programs of study are currently available in recreation, parks and tourism. The curriculum is recognized as an accredited professional program by the Council of Accreditation of the National Recreation and Park

Association/American Association for Leisure and Recreation. The importance of supervised field placement is recognized as part of professional development. Class practicums and projects and a 400-hour internship create opportunities to transform classroom knowledge into program service delivery.

### Program of study: Recreation and Park Management

The Recreation and Park Management option prepares students for leadership and mid-management positions in a variety of settings that provide recreation opportunities. Students will gain competence in leadership skills, program planning, park operations and agency administration.

General education	credits
ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Writing intensive elective	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
STAT 208 Statistical Thinking or equivalent	3
CMSC 128 Computer Concepts and Applications	
URSP 242, or three credits from	
INFO 160 through 168	3
Natural/physical science with laboratory	4
Social science elective	3
Social science elective	3
American studies elective	3
Global studies elective	3
Oral communication elective	3
Visual and performing arts elective(s)	2
	<hr/> 39

#### Recreation, parks and tourism core

RECR 195 Recreation Leadership	3
RECR 261 Recreation, Parks and Tourism in Modern Society	3
RECR 303 Leisure Delivery Systems	3
RECR 320 Recreation Analysis*	3
RECR 395 Recreation Program Development*	3
RECR 403 Recreation, Parks and Tourism Administration*	3
	<hr/> 18

#### Professional Core

RECR 331 Facility/Site Selection/Analysis	3
RECR 332 Facility/Site Design/Development	3
RECR 404 Revenue Sources in Recreation, Parks and Tourism*	3
RECR 465 Park Operations/Maintenance	3
RECR 490 Seminar*	3
RECR 493 Internship*	8
HPER Electives	6
	<hr/> 29

<b>Open electives</b>	13-19
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<b>Concentration or minor</b>	18-24
With approval of adviser, students can select an 18 hour concentration of upper-division course work or one of the following minors:	
Criminal justice	18
Social welfare	18
Urban studies	18
Health education	18
General business	21
Environmental studies	24
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<b>Total credits</b>	123
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- \* A minimum 2.0 cumulative GPA and a 2.0 major GPA are required to be eligible to enroll in this course.
- + A minimum 2.5 GPA in Recreation, Parks and Tourism Core and Professional Core is required to be eligible to enroll in this course.

### Program of study: Sport Management

The Sport Management option prepares students for career positions associated with creating and implementing quality sports programs. Students complete a core curriculum in recreation and parks blended with concentrations from business and mass communications. The option is designed for the management and marketing of sport facilities and services.

General education	credits
ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Writing intensive elective	3
Oral communication elective	3
American studies elective	3
Global studies elective	3
Social sciences elective	3
Social sciences elective	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
STAT 208 Statistical Thinking or equivalent	3
CMSC 128 Computer Concepts and Applications,	
URSP 242 or three credits from	
INFO 160 through 168	3
Natural science elective with laboratory	4
Visual and performing arts elective(s)	2
	<hr/> 39

#### Recreation, parks and tourism core

RECR 195 Recreation Leadership	3
RECR 261 RPT in Modern Society	3
RECR 303 Leisure Delivery Systems	3
RECR 320 Recreation Analysis*	3
RECR 395 Recreation Program Development*	3
	<hr/> 15

#### Sport management core

RECR 340 Introduction to Sport Management (prerequisite: MASC 101)	3
RECR 440 Administration of Sport Facilities (prerequisite: RECR 340)	3

RECR 441 Law and Sport (Prerequisite: RECR 340)	3
PHED 430 Sport Psychology or PHED 430 Psychosocial Aspects of Sport and Physical Activity	3
RECR 490 Seminar	3
RECR 493 Internship	8
	<hr/> 23

#### Business core

ECON 203 Introduction to Economics	3
ACCT 202 Accounting for Non-business Majors	3
MRBL 308 Introduction to Marketing (JR)	3
MRBL 323 Legal Environment of Business (JR)	3
FIRE 333 Risk and Insurance	3
MGMT 331 Personnel Management (JR)	3
MGMT 421 Small Business Management	3
	<hr/> 21

#### Mass communications core

MASC 101 Mass Communications (FR)	3
MASC 203 Newswriting (SO)	3
Select two of the three following:	6
MASC 323 Public Relations (3)	
MASC 361 Principles of Broadcasting (3)	
MASC 380 Introduction to Advertising (3)	
	<hr/> 12

<b>General electives</b>	13
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<b>Total credits</b>	123
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### Program of Study: Therapeutic Recreation

The Therapeutic Recreation option prepares future practitioners for employment in community, clinical and residential settings that provide leisure services and therapeutic interventions to persons with disabilities. The curriculum meets the standards prepared by the National Council for Therapeutic Recreation Certification. Graduates are qualified to sit for the Certified Therapeutic Recreation Specialist exam. Career opportunities in rehabilitation, psychiatric, child life, assisted living, and community recreation settings exist.

With slight modifications, the therapeutic recreation option meets the curriculum requirements for those students who wish to pursue graduate studies in either physical or occupational therapy.

General education	credits
ENGL 101 Composition and Rhetoric I	3
ENGL 200 Composition and Rhetoric II	3
Writing intensive requirement	3
MATH 131 Introduction to Contemporary Mathematics or equivalent	3
STAT 208 Statistical Thinking or equivalent	3
CMSC 128 Computer Concepts and Applications, URSP 242, or three credits from INFO 160 through 168	3
BIOL 101, 101L Life Science and Laboratory	4

PSYC 101 Introduction to Psychology	4
Social sciences elective	3
American studies elective	3
Global studies elective	3
Oral communication elective	3
Visual and performing arts elective(s)	2

40

**Recreation, parks and tourism core**

RECR 195 Recreation Leadership	3
RECR 261 Recreation, Parks and Tourism in Modern Society	3
RECR 303 Leisure Delivery Systems	3
RECR 320 Recreation Analysis*	3
RECR 395 Recreation Program Development*	3
RECR 403 Recreation, Parks and Tourism Administration*	3

18

**Professional core**

BIOL 205 Human Anatomy and Laboratory	4
BIOL/PHIS 206 Human Physiology and Laboratory	4
PSYC 304 Life Span Development	3
RECR 371 Introduction to Therapeutic Recreation	3
RECR 371L Introduction to Therapeutic Recreation Laboratory	1
PSYC 407 Psychology of the Abnormal	3
RECR 472 Therapeutic Recreation Program Development*	3
RECR 471 Clinical Assessment*	3
RECR 493 Internship*	8
RECR 506 Contemporary Issues*	3

35

**Electives**

12

**Concentration or minor**

18

With approval of adviser, students can select an 18 hour concentration of upper-division course work or one of the following minors:

Criminal Justice	18
Psychology	18
Social Welfare	18
Health Education	18

**Total credits**

123

**Therapeutic Recreation:  
Pre-occupational Therapy option**

Program adjustments to the therapeutic recreation curriculum for students who are pursuing admission to the VCU Department of Occupational Therapy masters' program are noted below.

Enrollment in PSYC 302 (Psychology of Adolescence) as an upper-level elective and STAT 210 instead of STAT 208

are the only adjustments needed. Students should inform their adviser if they plan to complete this track.

**Therapeutic Recreation:  
Pre-physical Therapy option**

Program adjustments to the Therapeutic Recreation curriculum for students who are pursuing admission to the VCU Department of Physical Therapy master's program are noted below.

Enrollment in MATH 151 or MATH 200 instead of MATH 131 and STAT 210 instead of STAT 208. In addition, the completion of a pre-physical therapy science core is needed. Courses include: BIOL 102/102L, PHYS 201/201L, PHYS 202/202L, CHEM 101/101L and CHEM 102/102L. Students should inform their adviser if they plan to complete this track.

**Minor in recreation, parks  
and tourism**

RECR 195 Recreation Leadership	3
RECR 261 Recreation, Parks and Tourism in Modern Society	3
RECR 303 Leisure Delivery Systems	3
RECR 395 Recreation Program Development*	3
Recreation electives selected in consultation with the recreation program head.	6

18

\* At least a 2.0 cumulative GPA and a 2.0 major GPA is required in order to be eligible to take this course.

**Master of science in physical  
education or recreation, parks  
and tourism**

The master of science in physical education and the master of science in recreation, parks and tourism are designed to provide advanced educational preparation for practitioners and students pursuing careers in public school health and physical education, exercise science, and diverse leisure settings and agencies. All programs focus on the exploration of theoretical foundations and the development and application of specialized professional knowledge, skills and abilities. These master's degrees require 33-36 credit hours. See the Graduate Bulletin for a more detailed description of these programs.

**Program Changes**

All programs in the Division of Health, Physical Education and Recreation are evaluated on a continual basis to ensure that the curriculum meets university guidelines and the standards of the division's various accrediting agencies. In order to maintain the highest standards, curriculum revisions are often necessary. Students should check with their adviser to obtain a copy of the current program requirements.

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M.Ed. University of Washington  
Ph.D. 1993 University of Wisconsin
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Ph.D. 1996 Arizona State University
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B.A. Bellarmine College  
M.S. St. Louis University  
Ph.D. 1972 Ohio State University
- Wehman, Paul\*  
White, Doris A. (1978) Associate Professor  
B.S. Tennessee A & I State University  
Ed.M. University of Illinois  
Ed.D. 1971 University of Illinois
- Wood, Judith W. (1980) Professor of Special Education  
B.S. University of Southern Mississippi  
M.Ed. University of Southern Mississippi  
Ph.D. 1979 University of Southern Mississippi
- Emeriti faculty**
- |                 |                 |
|-----------------|-----------------|
| Mary Brittain   | Patricia Duncan |
| Nancy Fallen    | Arnold Fleshood |
| Howard Garner   | Ada Hill        |
| James O. Hodges | William Judd    |
| Jean Lokerson   | Alice Pieper    |
| Howard Sparks   | Martin Tarter   |
| Rizpah Welch    | Esther Zaret    |
- Clinical faculty**
- |                    |                  |
|--------------------|------------------|
| Stacy Branch       | Marshall Brannon |
| Clarice Christian  | LaVerne Coles    |
| Geraldine Ellison  | Mary Fulghum     |
| Rose Gibson        | Barbara Goehle   |
| Carol Hazam        | Anthony Jackson  |
| Susan Johnson      | Hilda Kelly      |
| Patricia Lindstrom | Brenda Lucas     |
| David Moore        | Gregory Muzik    |
| Calvin Parham      | Susan Parsons    |
| Gabe Pascarella    | Alease Patterson |
| Betty Pinn         | Frances Raine    |
| Deborah Ritz       | Oneida Rozier    |
| Patty Smagala      | Thomas Stavredes |
| Patricia Taylor    | Ellen Terrell    |
| Lonnie Turnage     | Wendy Wadsworth  |
| R. Dennis Waldrop  | Roy Walton       |
| William Ware       |                  |

\* Joint or secondary appointment

## Division mission

The Division of Teacher Education is committed to excelling in the initial and continuing preparation of teachers for the commonwealth, with particular emphasis on early childhood through secondary education in diverse settings; to collaborating with colleagues in educational agencies; to applying research about learning in classrooms; to undertaking scholarly endeavors that examine learning and teaching processes; and to providing technical assistance to school divisions and agencies. The division values:

- providing the highest quality teaching and opportunities for learning,
- integrating academic disciplines, professional studies and clinical experiences as program components for student learning,
- collaborating in the preparation of teachers and in the continuing development of faculty both within the university and in public and private educational settings,
- enabling teachers and intending teachers to work effectively with students from diverse populations and those with special needs,
- helping intending teachers become effective decision-makers and practicing teachers refine their decision-making skills in the roles for which they are preparing,
- effectively modeling the use of technology to enhance and foster learning,
- incorporating, among others, developmental, cognitive and functional approaches and content areas in the preparation of personnel in early childhood/elementary, middle, secondary and special education programs,
- serving the university through faculty participation in institutional committees and task forces, programs and supportive research and service institutes and centers within the university, and
- serving the community through technical assistance, workshops, consulting, continuing education activities, professional development schools and other partnerships.

## Extended Teacher Preparation programs

The School of Education, in cooperation with the College of Humanities and Sciences, offers extended teacher preparation programs in early childhood/elementary education (pre-kindergarten through grade six); middle education (grades six through eight); secondary education (grades six through 12); and special education (kindergarten through grade 12). The successful completion of these programs results in the simultaneous awarding of both a bachelor's and a master's degree. The program requires 160<sup>1</sup> credits, at least 33 of which must be at the graduate level.

Prospective secondary school teachers earn their bachelor's degree in a specific field in which they plan to teach — English, foreign language, science, mathematics or history.

Similarly, prospective middle school teachers most often specialize in English, history, mathematics, science or social science. For students planning to become early childhood/elementary or special education teachers, any major in the humanities or the sciences is acceptable.

In the extended program, a student generally begins work on the professional studies component in his or her third year of study.

Information on specific requirements for all academic majors is available at the Division of Teacher Education, in the College of Humanities and Sciences' associate dean's office or through the department of the chosen major. A student in the extended program must maintain a minimum cumulative GPA of 2.5 for admission to teacher preparation and clinical experience, and prior to the fifth year a minimum GPA of 2.8 for admission to the graduate study portion of the program.

## Admission to the Extended Teacher Preparation Program

Any undergraduate admitted to VCU who declares a major in the College of Humanities and Sciences is eligible to declare a specialization in early childhood/elementary, middle, secondary or special education.

Transfer students and students currently attending VCU who wish to change their majors to this program must have a minimum GPA of 2.0; however, note the much higher GPA requirement for admission to teacher preparation and then to graduate study. All students in the program, upon completion of 60 hours of undergraduate course work and prior to completion of 90 hours, must apply for admission to teacher education. To be accepted, a student must have a minimum GPA of 2.5 and must have achieved the required commonwealth of Virginia scores on the Praxis I tests. Admission to graduate study requires a GPA of 2.8.

## General requirements and procedures

Students who pursue one of the extended teacher preparation programs follow a series of steps as noted in order to meet all requirements, including the 160 credits.

### Step 1: Admission to the university

#### Requirements

- a.) Scores from Scholastic Aptitude Test (SAT) or American College Test (ACT).
- b.) Minimum 2.0 GPA from high school or previous college.

#### Procedures

- a.) Declare an undergraduate major in the College of Humanities and Sciences.
- b.) Declare an education specialization in early childhood/elementary, middle, secondary, or special education.

### Step 2: Admission to teacher preparation

Complete before enrolling in the first practicum (upon completion of 60 credits of liberal arts and prior to completion of 90 credits).

#### Requirements

- a.) 2.5 GPA or better.
- b.) Completion of six hours of English, three hours of mathematics, four hours of laboratory science, and six hours of social science and/or history.
- c.) Meet Virginia scores required for Praxis I.
- d.) Confirmation of education specialization. Undecided majors must decide.
- e.) Enroll in or have completed EDUS 300.

#### Procedures

- a.) Complete Admission to Teacher Preparation Application Form (obtain in Office of Academic Services) and submit a current transcript.
- b.) Complete EDUS 300; submit required Praxis scores.

- c.) Register in dean's office for interview upon returning Admission for Teacher Preparation Application Form. Complete required interview with education program faculty. Special education requires interview with program faculty.

**Note:** Students must be admitted to Teacher Preparation Program to be eligible for practicum placement.

Applications for practicum are available at the Office of Academic Services.

- d.) Register for, take and submit required Praxis I scores.

### Step 3: Application to graduate studies

#### Requirements

- a.) 2.8 GPA or better. Students with GPAs of 2.6-2.75 may be considered for provisional admission.
- b.) Acceptable scores on the Graduate Record Examination (GRE) or Miller Analogies Test (MAT).
- c.) Personal statement addressing reasons for seeking graduate education, including career goals; experience working with age group to be taught; reasons for entering teaching; and success in organizing, planning, and implementing work with other individuals.
- d.) Three references. It is suggested that these be instructors or advisers in the College of Humanities and Sciences and the School of Education. Use Graduate Studies Reference Forms.

#### Procedures

- a.) Obtain Graduate School Admissions packet from the Office of Academic Services in Room 2087, Oliver Hall.
- b.) Return completed application packet, along with up-to-date transcripts, to VCU Office of Graduate Studies.

**Note:** Students must be admitted to the School of Graduate Studies to be eligible to enroll in graduate-level courses. Note School of Graduate Studies requirement that no more than six graduate credits taken prior to admission to graduate study may be accepted toward the degree.

### Application deadlines

May 15 for fall semester  
Nov. 15 for spring semester  
March 15 for summer session

### Step 4: Internship

All programs require during the fifth year a graduate-level internship (TEDU 672). Applications for internship can be obtained in the Office of Academic Services in Room 2087, Oliver Hall. Individuals choosing special education are placed in two different settings, one for emotional disturbance and one for mental retardation, each in a different semester. Individuals in early childhood/elementary education are placed in a kindergarten and a grade one through six in the same semester. Individuals in middle and secondary education typically have a single placement, although perhaps with two different teachers.

#### Requirements

- a.) 3.0 GPA or better on graduate courses.
- b.) Admission to teacher preparation and to graduate study.

<sup>1</sup> 156 credits for those in the 120 credit B.A. or B.S. programs in the College of Humanities and Sciences.

- c.) Completed application and transcripts submitted by established deadlines.

#### Procedures

- a.) Obtain application form from the Office of Academic Services.
- b.) Submit copies of transcripts and required statement to a professional studies adviser for review.
- c.) Obtain approval signature of professional studies adviser.
- d.) Submit completed application to Office of Academic Services by Oct. 1 for the following spring semester; by March 1 for the following fall semester.

#### Step 5: Admission to the profession

(During the final semester of enrollment.)

#### Requirements

- a.) Completion of all degree requirements.
- b.) Acceptable scores on Praxis I and applicable Praxis II Specialty Test.
- c.) Completion of application for initial teacher licensure (obtain from Office of Academic Services).

#### Procedures

- a.) Complete applications for undergraduate degree in humanities and sciences with academic major adviser, and graduate degree in education with professional studies adviser.
- b.) Submit application for initial teacher licensure with university supervisor or professional studies adviser signature to the Office of Academic Services.

#### Faculty advisement

An academic adviser is assigned to a student by the department of that student's chosen major in the College of Humanities and Sciences. A professional studies adviser is similarly assigned by the Division of Teacher Education according to the student's proposed teaching endorsement. This adviser-student relationship continues throughout the course of study at VCU. Student and adviser jointly develop the student's individual program. During the planning process, the student identifies, clarifies and explores his or her personal and professional goals.

#### Clinical experiences

Programs in elementary, middle, secondary and special education encompass planned experiences in the field or clinical settings, including guided practica experiences. These direct experiences lead to an internship.

With the guidance of a mentor, the intern assumes more independence in the field setting. Satisfactory completion of the internship and the preceding training is charted through evaluations

made by the university supervisor, colleague-teacher and school administrator.

#### Professional Development Schools

A Professional Development School (PDS) is one where substantial numbers of the faculty are: interested in working with future teachers, participating regularly in staff development, willing to research the answers to questions that concern them about teaching, learning and students. A VCU faculty liaison is in the school on a weekly basis working with teachers, students and administrators, and significant numbers of VCU students are placed there for various clinical experiences. PDSs in 1999-2000 included:

##### Elementary

Beaverdam Elementary (Hanover County)  
Glen Lea Elementary (Henrico County)  
Mary Munford Elementary (Richmond City)  
Whitcomb Model Elementary (Richmond City)

##### Middle

Falling Creek Middle (Chesterfield County)  
Manchester Middle (Chesterfield County)  
Mount Vernon Middle (Henrico County)

##### High

Governor's School for Government and International Studies (a regional high school located in Richmond and serving more than a dozen school divisions)

#### Teacher as decision maker

The guiding theme of the program is "teacher as decision maker." Virtually all courses and experiences in the program either implicitly or explicitly prepare the prospective teacher with appropriate knowledge on which instructional decisions can be made.

Courses in specific areas, such as the teaching of mathematics, science, social studies and English address the processes and skills which permit teachers to transmit the content in meaningful and effective ways.

Courses in process areas such as reading give teachers the competencies required to assist children in developing skills which undergird instruction in all other areas.

General curriculum courses help teachers to understand the relationship of philosophies and theories of learning to the developmental growth of students. These courses help teachers to integrate their understanding of students' physical, emotional, social and

mental growth with their knowledge of the content of the discipline. Strategies for instructional planning and classroom management are essential components.

#### Dissimilarities

The demographics of elementary, middle and high school students are changing: increasing numbers of students for whom English is not the first language, of minority students, of students who do not all learn or respond in similar ways and of students who may be identified as possessing a disability.

Future teachers are encouraged to take advantage of opportunities through formal courses and other experiences to gain greater insight and ability addressing learners from differing cultural backgrounds, and considering the needs of learners with different learning styles, participation styles and special abilities or disabilities.

#### Scholarships and awards

In addition to other awards, students in the Division of Teacher Education are eligible for the following scholarships.

- the Virginia Arnold Scholarship (elementary and middle)
- the Pearl Burford Scholarship (elementary)
- the N. Thelma Jones Scholarship (secondary)
- the Ann Elizabeth Marston Scholarship (elementary and secondary)
- the Virginia and Berta M. Newell Endowed Scholarship (elementary and middle)
- the Teacher Education Scholarship (funded by division faculty; elementary, middle, secondary and special education students are eligible)

#### Honors study

Students who qualify can participate in the University Honors Program and are eligible to take course sections and special seminars designated "honors."

Honors sections of the Foundations of Education and Human Development and Learning courses are offered to qualified students, providing them with opportunities for critical investigation in areas of special professional interest.

## Standards of learning

Much of the pre-kindergarten through grade 12 curriculum is based on the commonwealth of Virginia's current Standards of Learning (SOLs). Students preparing to be teachers are advised to examine the SOLs for the grade levels and content areas they plan to teach. The Division of Teacher Education Web site has a link to the SOLs.

— — — [www.vcu.edu/eduweb](http://www.vcu.edu/eduweb)

In some instances the content and concepts associated with one or more SOLs may be incorporated in a course in the College of Humanities and Sciences or in the School of Education, but as the SOLs are for a kindergarten through grade 12 curriculum and not a college curriculum, one may need to study several of these on her or his own.

## Technology standards

The use of computers, graphing calculators, science probeware and other technologies is integral to successful teaching in today's schools. Individuals preparing to teach must be competent on each of the the eight standards in Virginia's Technology Standards for Instructional Personnel. These standards may be reached through the Division of Teacher Education Web page as described in the section on SOLs above.

Students are advised to consult with the professional studies adviser regarding the program's requirements for demonstrating competence. Several of the standards may be documented as met by passing the Computer Literacy Evaluation Test offered through the Department of Mathematical Sciences. Please see the General Education Requirements for bachelor of arts and bachelor of science degrees under the College of Humanities and Sciences section of this bulletin.

## Early Childhood/Elementary Education Program, P-6

This program focuses on the preparation of the teacher planning to work with children from infancy through age 11, covering nursery school and kindergarten through grade six.

After completing this program, the student is eligible for licensure in

teaching preschool and elementary grades.

## Liberal arts and sciences requirements

Individuals choosing the early childhood/elementary education specialization may select almost any major offered by the College of Humanities and Sciences. A major in one of the content areas typically taught (mathematics, science, English, history or perhaps social science) is particularly appropriate, but majors in other liberal arts areas are acceptable.

The program seeks, among other goals, to prepare teachers to be more comfortable with and better able to teach mathematics and science effectively in kindergarten through grade six. Within or in addition to the general education and academic major requirements in the College of Humanities and Sciences, candidates in the early childhood/elementary education (pre-kindergarten through grade six) specialization are expected to meet these liberal studies requirements:

**Mathematics and statistical reasoning.** The general education requirement is three to six credits; the Early Childhood/Elementary Program requirement is six credits, including three credits in mathematics at the college algebra level or higher and three credits in a statistics course typically taught by a college department of mathematics. Choosing among these courses is recommended:

MATH 131 Introduction to Contemporary Mathematics	
MATH 303 Investigations in Geometry	
STAT 208 Statistical Thinking	
STAT 210 Basic Practice of Statistics	

**Natural sciences.** The general education requirement is seven to nine credits, with one course each from the physical sciences and the biological sciences, with at least one laboratory; the program requirement is 12 credits, again with at least one course each in the physical sciences and the biological sciences, and two laboratories. Choosing among these courses is recommended:

	Credits
<b>Biological sciences</b>	
BIOL 101, 101L Life Science and Laboratory	4
BIOL 102, 102L Science of Heredity and Laboratory	5
BIOL 103, 103L Environmental Science and Laboratory	5

## Physical sciences

CHEM 110, 110L Chemistry and Society and Laboratory	3
CHEM 112 Chemistry in the News	3
PHYS 101, 101L Foundations of Physics and Laboratory	4
PHYS 107, 107L Wonders of Technology and Laboratory	4

**Interdisciplinary science.** The program further requires three credits of interdisciplinary mathematics and science. Choosing among these courses is recommended:

INSC 300 Experiencing Science	
INSC 301 Investigating Mathematics and Science	

**Visual and performing arts.** Three credits in art or music to be designated with the professional studies adviser.

## Professional studies requirements (60 credits)

Undergraduate	credits
EDUS 300 Foundations of Education	3
PSYC 301 Child Psychology	3
EDUS/PSYC 305 Educational Psychology	3
TEDU 310 Practicum I (with TEDU 414 and TEDU 426)	2
TEDU 310 Practicum II (with TEDU 522)*	2
TEDU 351 Children's Literature I	3
PHED 390 Physical Education for Elementary Teachers	3
TEDU 414 Curriculum and Methods for Young Children	4
TEDU 426 Teaching Reading and Other Language Arts	3
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## Graduate

TEDU 517 Science Education in the Elementary School	3
TEDU 522 Teaching Mathematics for Elementary Education	3
TEDU 566 Diagnosis and Remediation in Reading	3
TEDU 591 Social Studies Education in the Elementary School	3
TEDU 605 Theory and Practice of Educating Individuals with Special Needs	3
EDUS 607 Advanced Educational Psychology	3
TEDU 626 Home-School Communication and Collaboration	3
TEDU 672 Internship I + II (K and grades 1-5 placements)	9
EDUS 673 Seminar on Educational Issues, Ethics and Policy	3
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\* TEDU 310 Practicum II must be taken concurrently with TEDU 522; TEDU 517 and 591 must have been completed; TEDU 566 must also have been completed or taken concurrently with TEDU 310.

## Middle Education Program, 6-8

The Middle Education Program prepares the prospective teacher to instruct children between the ages of 11 and 14, grades six through eight. A graduate of this program can be licensed to teach in elementary and middle school grades.

### Liberal arts and sciences requirements

In addition to satisfying the general education requirements of the College of Humanities and Sciences, candidates selecting middle education as the specialization must:

1. Choose a major in one of the subjects taught in middle schools (mathematics, one of the sciences, English, history or a social science such as political science). Other liberal arts majors may be chosen, but an individual with such a major will likely not be as "marketable."
2. Choose an additional concentration of 18 semester credits in another of the content areas in 1. (Most middle schools organize into teams, with a teacher typically responsible for two subjects.)
3. Individuals planning to major in English, history or a social science may wish to consider credits in mathematics and science from courses, both for the general education requirement and their own edification, such as these:

	credits
MATH 131 Introduction to Contemporary Mathematics	3
MATH 303 Investigations in Geometry	3
STAT 208 Statistical Thinking	3
STAT 210 Basic Practice of Statistics	3
BIOL 101, 101L Life Science and Laboratory	4
BIOL 102, 102L Science of Heredity and Laboratory	5
BIOL 103, 103L Environmental Science and Laboratory	5
CHEM 110, 110L Chemistry in Context and Laboratory	4
CHEM 112 Chemistry in the News	3
PHYS 101, 101L Foundations of Physics and Laboratory	4
PHYS 107 Wonders of Technology	4
INSC 300 Experiencing Science	3
INSC 301 Investigating Mathematics and Science	3

### Professional studies requirements (45 credits)

Undergraduate	credits
EDUS 300 Foundations of Education	3
EDUS 301 Human Development and Learning	3

TEDU 310 Practicum A (concurrent with TEDU 544)	1
TEDU 310 Practicum B (concurrent with TEDU 521 or 540)	1
TEDU 310 Practicum C (concurrent with one of: TEDU 550 or the course not taken with Practicum B)	1
TEDU 407 Educational Media: Utilization	3
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### Graduate

Choose two of the courses from:	6
TEDU 521 Teaching Mathematics for Middle Education (3)	
TEDU 540 Teaching Middle and High School Sciences (3)	
TEDU 550 Teaching Interdisciplinary Language Arts and Social Studies in the Middle School (3)	

### Complete each of these courses:

TEDU 544 Introduction to the Middle School	3
TEDU 562 Reading Instruction in the Content Areas	3
EDUS 607 Advanced Educational Psychology	3
TEDU 672 Internship I + II	9
EDUS 673 Seminar on Educational Issues, Ethics and Policy	3
TEDU 681 Investigations and Trends in Teaching*	3

### Graduate selective chosen from:

CMSC 554 Applications of Technology in the Teaching of Mathematics	3
TEDU 556 Computer Applications in Education	
TEDU 600 Organizing for Effective Classroom Instruction	
TEDU 605 Theory and Practice of Educating Individuals with Special Needs	
TEDU 626 Home-School Communication and Collaboration	
EDUS 660 Research Methods in Education	
ENED 601 Young Adult Literature	
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\* Pertinent subject section (e.g., English, mathematics, science or social studies)

## Secondary Education Program, 6-12

These programs prepare the student for a career as a secondary school teacher — grades six through 12. Teaching endorsements are available in drama, English, French, German, Spanish, history, economics, geography, history, and social studies, political science, mathematics, biology, physics, chemistry and general science. Added endorsements are available in English as a second language and earth science.

### Liberal arts and sciences requirements

In addition to satisfying the general education requirements of the College of Humanities and Sciences, candidates selecting secondary education as the specialization must choose a major in one of these subjects taught in high schools (biology, chemistry, English, French, German, history, mathematics, physics, political science or Spanish).

### Professional studies requirements (42 credits)

Undergraduate	credits
EDUS 300 Foundations of Education	3
EDUS 301 Human Development and Learning	3
TEDU 310 Practicum A (concurrent with TEDU 537)	2
TEDU 310 Practicum B (concurrent with TEDU 540, 543, 545, 547 or 548)	1
	<hr/> 9
Graduate	
TEDU 537 Secondary School Curriculum	3
One of:	3
TEDU 540 Teaching Middle and High School Sciences	
TEDU 543 Teaching Secondary School Foreign Languages	
TEDU 545 Teaching Secondary School Mathematics	
TEDU 547 Teaching Secondary School Social Studies	
TEDU 548 Teaching Secondary School English	
EDUS 607 Advanced Educational Psychology	3
TEDU 672 Internship I and II†	9
EDUS 673 Seminar on Educational Issues, Ethics, and Policy	3
TEDU 681 Investigations and Trends in Teaching:* English; Foreign Language; Mathematics; Science; Social Science	3
Graduate selective <sup>Δ</sup>	9
	<hr/> 33

\* Select section matching content area to be taught

† A minimum of 21 credits, including EDUS 300, 301, TEDU 310, 537, one of (TEDU 540, 543, 545, 547 or 548), EDUS 607 or 673 and the required selective (see 1 below), must be completed prior to the internship.

<sup>Δ</sup> Graduate selectives are to be chosen from:

#### 1. Three credits from:

##### Technology:

TEDU 556 Computer Applications in Education  
CMSC 554 Applications of Technology in the Teaching of Mathematics (required in mathematics)

OR

##### Reading:

TEDU 562 Reading Instruction in the Content Areas

OR

##### Classroom management:

TEDU 600 Organizing for Effective Classroom Instruction

TEDU 631 Behavior Management of Students with Disabilities

OR

**Special education:**

TEDU 605 Theory and Practice in Educating Individuals with Special Needs

SELD 600 Characteristics of Persons with Learning Disabilities

**2. Six credits from other courses in 1 above, from the academic major, or from courses such as these:**

TEDU 521 Teaching Mathematics for Middle Education (required in math)

TEDU 626 Home-School Communication and Collaboration

EDUS 660 Research Methods in Education

ENED 601 Young Adult Literature

All selectives should be chosen in consultation with the professional studies adviser.

## Special Education Program, K-12

This two-pronged program instructs the prospective teacher in the special skills needed to teach emotionally disturbed and mentally retarded children and adolescents. A student in this program receives dual endorsement.

### Emotional disturbance

This phase prepares the student to teach emotionally disturbed people in school and residential settings. The student learns to apply a variety of interventions because of the integration of didactic course work and clinical experience. The program emphasizes the development of a broad range of teaching competencies derived from theoretical models to promote social, behavioral and academic growth in behavior disordered and emotionally disturbed pupils.

### Mental retardation

This phase prepares the student to teach mentally retarded people in public, private and community settings. The program stresses assessment, curriculum, service delivery and adaptation techniques for general educators.

### Liberal arts and sciences requirements

In addition to satisfying the general education requirements of the College of Humanities and Sciences, candidates selecting special education as the specialization may choose almost any College of Humanities and Sciences

major offered. One in the social sciences, such as psychology or sociology, may be especially useful, but so are ones in English, a science, mathematics, history or similar major.

### Professional studies requirements

#### Special education, K-12

	credits
EDUS 300 Foundations of Education	3
EDUS 301 Human Development and Learning or PSYC 305 Educational Psychology	3
TEDU 310 Practicum: Emotional Disturbance	2
TEDU 310 Practicum: Mental Retardation	2
TEDU 330 Survey of Special Education	3
TEDU 331 Human Interaction in Teaching	3
TEDU 522 Teaching Mathematics for Elementary Education or TEDU 421 Teaching Mathematics for Middle Education	3
TEDU 426 Teaching Reading and Other Language Arts	3
TEDU 468 Educational Diagnosis of Exceptional Individuals	3
EMOD 500 Characteristics of Students with Emotional Disturbances	3
EMOD 501 Teaching Students with Emotional Disturbance	3
MNRT 556 Introduction to Mental Retardation	3
MNRT 560 Methods for Students with Mental Retardation	3
MNRT 500 Language Intervention for Children and Learners with Severe Disabilities or SELD 530 Language Disabilities: Assessment and Teaching	3
TEDU 631 Behavior Management of Students with Disabilities	3
TEDU 632 Secondary Programming for Students with Disabilities	3
TEDU 672 Internship: Emotional Disturbance	6
TEDU 672 Internship: Mental Retardation	6
EDUS 6XX Foundations course (choose with adviser)	6
Elective	3

### Minor in foundations of special education

The minor provides an opportunity to explore the field of special education and disabilities, for focused investigation of human behavior within the context of educational institutions or explorations related to possible or real career needs. Completion of this minor does not result in licensure or endorsement for teaching in the commonwealth of Virginia.

The minor requires a minimum of 21 semester hours. If one or more of these courses is taken to satisfy a general studies requirement or a major requirement, it may also be counted toward the minor.

	credits
EDUS 300 Foundations of Education	3
EDUS 301 Human Development and Learning or EDUS/PSYC 305 Educational Psychology	3
TEDU 330 Survey of Special Education	3

### Selectives (select any four): 12

TEDU 331 Human Interaction in Teaching (3)
TEDU 573 Introduction to Learning Disabilities (3)
EMOD 500 Characteristics of Students with Emotional Disturbances (3)
MNRT 556 Introduction to Mental Retardation (3)
PHED 495 Adaptive Physical Education (3)

## Master of Education programs

The division offers Master of Education programs designed to provide advanced educational preparation for practitioners. These programs are:

### Special education

Early childhood special education (birth to age 5)  
Emotional disturbance  
Learning disabilities  
Mental retardation  
Severe disabilities

### Curriculum and instruction

Early, middle or secondary education  
Instructional technology  
Library/media

### Reading

These programs typically require 36-42 credits. See the Graduate Bulletin for a more detailed description of each program.

## Post-baccalaureate Certificate Program

The Post-baccalaureate Certificate in Teaching Program is designed for the student holding a bachelor's degree in a field other than education who wishes to teach in one or more grades kindergarten through 12, who wishes to teach in a shortage area and for whom a master's degree is not a priority. Shortage areas are typically in sciences and mathematics rather than humanities or social sciences.<sup>1</sup> Candidates for this program must hold a liberal arts degree or its equivalent. Those candidates planning to teach at the secondary-level

<sup>1</sup> Open only in selected shortage content areas at the secondary level or shortages in the teaching force identified by VCU.

must have a major or its equivalent in the subject they wish to teach. Candidates also should have an advanced degree.

Candidates are required to complete a minimum of 24 designated hours beyond the bachelor's level. The minimum number of hours, including those at the undergraduate-level, varies by certificate track. For instance, 30 hours are required for the secondary education track, whereas 38 hours are required for a student in the middle education track. (See the Graduate Bulletin for a more detailed description).

## Division of Educational Studies

### John T. Seyfarth

Professor and Division Head (1974)  
B.S. University of Chattanooga  
M.S. University Tennessee  
Ed.D. 1969 University Tennessee

Beale, Andrew V. (1969) Professor

A.B. University of North Carolina  
M.S. University of North Carolina  
Ed.D. 1969 University of Virginia

Caulley, Kathleen M. (1985) Associate Professor

B.A. 1977 Pennsylvania State University  
Ph.D. 1985 University of Delaware

Craver, Samuel M. (1971) Professor

B.A. 1963 University of North Carolina  
M.A.T. 1964 University of North Carolina  
Ph.D. 1971 University of North Carolina

Dilworth, Robert L. (1993) Associate Professor

B.S. University of Florida  
M.S. United States Army Command and General Staff College  
M.P.A. 1975 University of Oklahoma  
M.Ed. 1992 Columbia University  
Ed.D. 1993 Columbia University

Gerber, Paul J. (1988) Professor of Special Education

B.A. 1972 Adelphi University  
M.A. 1975 University of Michigan  
Ph.D. 1978 University of Michigan

Hephner, Thomas A. (1976) Associate Professor

and Director, Continuing Education and Field Services

B.A. 1958 Kent State University  
B.S. 1963 Ohio State University  
M.S. 1968 Ohio State University  
Ph.D. 1972 Ohio State University

Lambie, Rosemary Anne (1978) Professor

A.B. 1968 Loyola University  
M.A. 1971 University of North Colorado  
Ed.D. 1978 University of Kansas Medical Center

Leone, Susan D. (1986) Associate Professor

B.A. 1966 University of Northern Iowa  
M.Ed. 1974 Virginia Commonwealth University  
Ed.D. 1994 University of Virginia

Linder, Fredric (1973) Assistant Professor

A.B. University of Miami  
M.A. New School of Social Research, New York  
Ph.D. 1971 State University of New York, Buffalo

Londoner, Carroll A. (1972) Professor of Adult Education

B.A. University of California, Los Angeles  
B.D. San Francisco Theological Seminary  
M.A. 1968 Indiana University  
Ph.D. 1970 Indiana University

McCay, Eliza Beth (1998) Assistant Professor

B.S. 1982 Wheelock College, Boston  
M.Ed. 1990 University of Virginia  
Ph.D. 1998 University of Virginia

McMillan, James H. (1979) Professor

B.A. Albion College  
M.A. Michigan State University  
Ph.D. 1976 Northwestern University

Philipsen, Maïke I. (1993) Associate Professor

B.A. 1984 Rheinische Frederick-Wilhelms University  
M.A. 1989 Free University of Berlin  
Ph.D. 1993 University of North Carolina, Chapel Hill

Schumacher, Sally A. (1974) Associate Professor

B.A. Duke University  
M.Ed. University of North Carolina  
M.A. Northwestern University  
Ph.D. 1975 Washington University

Strandberg, Warren D. (1972) Professor

B.A. University of Minnesota  
M.A. Northwestern University  
Ph.D. 1967 Northwestern University

Vacca, Richard S. (1967) Professor

B.A. 1959 Lafayette College  
M.S. 1965 State University of New York, Oneonta  
Ed.D. 1967 Duke University

Wergin, Jon F. (1973) Professor

B.A. University of Nebraska  
M.A. University of Nebraska  
Ph.D. 1973 University of Nebraska

Wright, Mary Ann (1999)

B.A. College of William and Mary  
M.Ed. Virginia Commonwealth University  
Ph.D. Virginia Commonwealth University

### Emeriti faculty

James Bailey

William Bost

Jack Duncan

Vivien Ely

Gordon Keesee

John Mapp

Howard Ozmon

Charles Sharman

Ronald Sherron

Gaynelle Whitlock

The Division of Educational Studies offers the student undergraduate courses in foundational studies necessary for specialized work in education degree programs. All degree-seeking undergraduate students in education are required to take EDUS 300 Foundations of Education and EDUS 301 Human Development and Learning. Other foundations requirements are listed under each specific program of study.

## Course descriptions

### Courses in adult education (ADLT)

#### ADLT 402 How Adults Learn.

Semester course; 3 lecture hours. 3 credits. Overview of the adult as a learner. Topics include how and what adults learn, why adults participate in learning, and major barriers to learning for adults. Implications for teachers/trainers of adults are explored.

#### ADLT 403 Human Resource Development.

Semester course; 3 lecture hours. 3 credits. Course designed to improve qualifications of those seeking employment in the human resources field. Focuses on human resource development, organization development and their relationship to human resource management (HRM).

### Courses in educational studies (EDUS)

#### EDUS 200 Education in American Society.

Semester course; 3 lecture hours. 3 credits. An elective course for non-education majors, including those who may be exploring careers in education. An examination of the complex nature of our American educational system and various societal influences on that system. The course will include an exploration of some critical issues affecting the future of American education, on-site visits to educational institutions, and other field experiences in settings that will permit exploration of career options.

#### EDUS 300 Foundations of Education.

Semester course; 3 lecture hours. 3 credits. The historical, sociological, and philosophical backgrounds of educational theories and practices. The aim of the course is to help the student develop a basic understanding of education in the modern world.

#### EDUS 301 Human Development and Learning.

Semester course; 3 lecture hours. 3 credits. A study of human development through the life span with special emphasis on child and adolescent psychology, the nature of learning, and basic concepts of learning theories.

#### EDUS 305/PSYC 305 Educational Psychology.

Semester course; 3 lecture hours. 3 credits. The application of psychological principles to the teaching-learning process, with special emphasis on theories of learning and development.

#### EDUS 400 Independent Study.

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

#### EDUS 401 Pupil Evaluation.

Semester course; 3 lecture hours. 3 credits. Principles and procedures of evaluation of pupil growth in cognitive, affective, and psychomotor domains for a prospective classroom teacher; construction and analysis of teacher-made tests and

other formal and informal assessment procedures; interpretation and use of criterion-referenced and norm-referenced standardized tests in measuring group and individual achievement.

#### **EDUS 476 Methods for Residence Hall Assistants.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Serve in VCU residence halls or permission of instructor. Course designed primarily to present resident assistants and others with student development concepts, peer assistance and helping skills, and group techniques. Residence halls will be used as primary learning laboratories.

#### **EDUS 494 Topical Seminar in Education.**

Semester course; variable; 1-3 credits. May be repeated for a maximum of six credits. A seminar intended for group study by personnel interested in examining topics, issues, or problems related to the teaching, learning, and development of students.

### **Courses in health education (HLTH)**

#### **HLTH 190/PHED 190 History and Philosophy of Physical Education.**

Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

#### **HLTH 225 Introduction to Athletic Training.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 205 and BIOL 205L. Corequisite: HLTH 225L. An introduction to the field of athletic training. Includes the prevention and basic care of athletic injuries in the physically active.

#### **HLTH 225L Introduction to Athletic Training Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HLTH 225. Laboratory fee required. A laboratory to introduce the basic skills used by an athletic trainer in the prevention and care of athletic injuries in the physically active.

#### **HLTH 226 Pathology and Pharmacology in Athletic Training.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HLTH 225 and HLTH 225L. This course is designed to acquaint the student with the pathology of athletic injuries and the proper use of pharmacology in the treatment of athletic injuries in the physically active. The course will include the pathomechanics of sports injuries and the use of medication in the treatment of sports injuries.

#### **HLTH 300 Introduction to Health.**

Semester course; 3 lecture hours. 3 credits. An introduction to the five dimensions of health emphasizing personal application and encouraging conscious decisions about a variety of behaviors that can make a difference in one's health status.

#### **HLTH 310/PHED 310 Early Professional Experience.**

Semester course; 3 laboratory hours. 1 credit. Opportunities are provided for observation and experience with professionals in the health and physical education fields. Designed for the students entering the fields to explore specific areas on campus or in the community.

#### **HLTH 326 Upper Extremity Assessment of Athletic Injuries.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HLTH 225 and HLTH 225L and HLTH 226. Corequisites: HLTH 226L and 393. This course includes the assessment and management of upper extremity athletic injuries in the physically active. Includes the study of head, neck, thoracic, abdominal, shoulder, elbow, forearm, wrist, hand and finger injuries.

#### **HLTH 326L Upper Extremity Assessment of Athletic Injuries Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HLTH 326. Laboratory fee required. This laboratory course includes practice in the skills of assessment and management of upper extremity athletic injuries in the physically active. Includes head, neck, thoracic, abdominal, shoulder, elbow, forearm, wrist, hand and finger injuries.

#### **HLTH 327 Lower Extremity Assessment of Athletic Injuries.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: HLTH 326 and HLTH 326L. Corequisites: HLTH 327L and HLTH 395. This course is designed to acquaint the student with the proper assessment and treatment procedures for lower extremity athletic injuries in the physically active. The course will include the prevention, care and treatment of lower back, hip, thigh, knee, lower leg, ankle and foot athletic injuries.

#### **HLTH 327L Lower Extremity Assessment of Athletic Injuries Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HLTH 327. Laboratory fee required. This laboratory course is designed to acquaint the student with the proper assessment and treatment procedures for lower extremity athletic injuries in the physically active. The lab will include prevention, care and treatment of lower back, hip, thigh, knee, lower leg, ankle and foot athletic injuries.

#### **HLTH 329 Therapeutic Exercise in Athletic Training.**

Semester course; 3 lecture hours. 3 credits. Corequisites: HLTH 329L and HLTH 395. This course is designed to acquaint the student with the proper use of therapeutic exercise in the treatment and rehabilitation of athletic injuries in the physically active. This course will include the use of therapeutic exercise in the treatment of groin, thigh, hip, knee, lower leg, ankle, foot, shoulder, elbow, wrist, hand, finger, and back athletic injuries.

#### **HLTH 329L Therapeutic Exercise in Athletic Training Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HLTH 329. This laboratory course is designed to acquaint the student with the proper use of therapeutic exercise in the treatment and rehabilitation of athletic injuries in the

physically active. The lab course will include the skills of the therapeutic exercise used in the treatment of groin, thigh, hip, knee, lower leg, ankle, foot, shoulder, elbow, wrist, hand, finger, and back athletic injuries.

#### **HLTH 338 Therapeutic Modalities in Athletic Training.**

Semester course; 3 lecture hours. 3 credits. Corequisite: HLTH 338L and HLTH 393. This course is designed to provide the student with a knowledge of the proper use of therapeutic modalities in the treatment of athletic injuries in the physically active.

#### **HLTH 338L Therapeutic Modalities in Athletic Training Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: HLTH 338. Laboratory fee required. This laboratory course will allow the student to develop the practical skills required to properly apply therapeutic modalities used to treat athletic injuries in the physically active.

#### **HLTH 380 Principles of Accident Prevention.**

Semester course; 3 lecture hours. 3 credits. This course is designed to provide information on the magnitude of the accident problem in the nation. Special attention is given to concepts and theories of accident prevention, particularly as they relate to use of highways.

#### **HLTH 382 Introduction to Driver Education.**

Semester course; 3 lecture hours. 3 credits. A current automobile operator's permit is required. An introduction to the vehicle operator's task within the highway transportation system: driver task analysis.

#### **HLTH 386 School and Community Health Resources.**

Semester course; 3 lecture hours. 3 credits. Acquaints the student with current available school and community resources and educational materials for health information. Available services in a community health program will be surveyed.

#### **HLTH 393 Clinical Experience in Athletic Training I.**

Semester course; 200 practicum hours. 4 credits. Prerequisite: Permission of instructor required. The first of a series of clinical education courses designed to provide the student hands-on experience in the prevention and care of athletic injuries in the physically active. This course includes one-on-one instruction and supervised clinical experiences (minimum of 200 hours) in the athletic training room, sports medicine clinics, and affiliated sites. Includes supervised instruction of basic taping, bandaging and assessment skills of an athletic trainer.

#### **HLTH 395 Clinical Experience in Athletic Training II.**

Semester course; 200 practicum hours. 4 credits. Prerequisite: HLTH 393. Permission of instructor required. The second of a series of clinical education courses designed to provide the student hands-on experience in the prevention and care of athletic injuries in the physically active. This course includes one-on-one instruction and supervised clinical experiences (minimum of 200 hours) in the athletic training room, sports medicine clinics, and affiliated sites. Includes more advanced taping, bandaging and assessment skills of an athletic trainer.



**HLTH 397/PHED 397 Methods in Health and Physical Education.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Methods, materials, techniques, and skills in teaching health and physical education are discussed. Major topics include teaching styles, instructional guides, student evaluation, teacher evaluation, and discipline, as well as their application in teaching setting.

**HLTH 398/PHED 398 Curriculum in Health and Physical Education.**

Semester course; 3 lecture hours. 3 credits. Curriculum planning will include key aspects in the development of school health and physical education programs. Preparations and development strategies for course outlines, unit/lesson plans, and the writing of behavioral objectives are highlighted. Related subject areas, trends, and problems also are examined.

**HLTH 400 Nutrition.**

Semester course; 3 lecture hours. 3 credits. Provides learning opportunities that enable the student to acquire a practical and useful knowledge based on the sound principles of applied human nutrition. Emphasis will be on nutritional needs through the cycles of life providing information that will enhance the student's own lifestyle and provide experience in interpreting nutritional information for the public.

**HLTH 410 Issues in Sexuality.**

Semester course; 3 lecture hours. 3 credits. An overview of content, principles, and strategies relating to issues in human sexuality both in the community and school settings. Basic concepts of human sexuality as they develop in today's world are presented. Issues include sexual maturity, reproductive systems, conception, birth, abortion, and varieties of sexual behavior and sexual dysfunctions and disorders.

**HLTH 420 Substance Abuse.**

Semester course; 3 lecture hours. 3 credits. A survey of drugs that are used and abused in contemporary society. Multidisciplinary lectures and discussions include the historical and sociological perspectives of drugs in the school and community; the psychological and physiological effects of drug use; and the role of local and regional resources. Designed for students, teachers, counselors, administrators, and other interested persons. Rehabilitation methods and prevention programs also will be discussed.

**HLTH 421 Athletic Training Administration.**

Semester course; 3 lecture hours. 3 credits. This course is designed to acquaint the student with the proper organization and management techniques used by athletic trainers in health care administration of athletic training programs. This course will include organization, management and administration of health care in the physically active in the athletic setting.

**HLTH 430 Trends in Modern Diseases.**

Semester course; 3 lecture hours. 3 credits. Communicable disease, nutritional disease, prevention (immunizations), developmental abnormalities, congenital defects, the handicapped child, and adolescent medicine are included.

**HLTH 480 Safety, First Aid and CPR.**

Semester course; 3 lecture hours. 3 credits. This course includes American Red Cross and/or American Heart Association certification in Multimedia Standard First Aid and Basic Life Support (cardiopulmonary resuscitation). In addition, basic principles of accident causation and prevention are presented.

**HLTH 482 Methods in Driver Education.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: HLTH 382. This course is designed to provide driver education instructional principles and methodology.

**HLTH 487 Coping and Adaptation.**

Semester course; 3 lecture hours. 3 credits. Focuses on common stress factors in life such as death, personal loss, life changes, divorce, and emotional problems, such as anger, loneliness, and frustration. Strategies for dealing with such stressors are discussed and applied to both personal and professional settings.

**HLTH 493/PHED 493 Tests and Measurement in Health and Physical Education.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 111. Topics include selecting, administering, scoring, and evaluating tests in the areas of general motor performance, health screening, fitness, sports skills, and knowledge. Scientific test construction and basic statistical analysis.

**HLTH 494/PHED 494 Topical Seminar in Health and Physical Education.**

Semester course; 1-3 credits, repeatable up to six credits. An in-depth study of a topic, issue, or problem in health and/or physical education. See the Schedule of Classes each semester for specific topics to be offered.

**HLTH 494 Clinical Experience in Athletic Training III.**

Semester course; 200 practicum hours. 4 credits. Prerequisite: HLTH 395. Permission of instructor required. The third of a series of clinical education courses designed to provide the student hands-on experience in the prevention and care of athletic injuries in the physically active. This course includes one-on-one instruction and supervised clinical experiences (minimum of 200 hours) in the athletic training room, sports medicine clinics, and affiliated sites. Includes advanced assessment and treatment skills of an athletic trainer.

**HLTH 496 Clinical Experience in Athletic Training IV.**

Semester course; 200 practicum hours. 4 credits. Prerequisite: HLTH 494. Permission of instructor required. The last in a series of clinical education courses designed to provide the student with hands-on experience in the prevention and care of athletic injuries in the physically active. This course includes one-on-one instruction and supervised clinical experiences (minimum of 200 hours) in the athletic training room, sports medicine clinics, and affiliated sites. An advanced opportunity to apply all the skills of an athletic trainer under the supervision of a certified athletic trainer.

**Courses in physical education (PHED)****PHED 190/HLTH 190 History and Philosophy of Physical Education.**

Semester course; 3 lecture hours. 3 credits. An overview of the professional aspects of health and physical education. Historical and philosophical concepts, evaluation and research methods, current issues and trends, and career opportunities are discussed. Field experiences allow exposure to various professionals and facilities related to the health and physical education domains.

**PHED 300 Coaching Seminar.**

Semester course; 1 lecture hour. 1 credit. A lecture/discussion course that identifies the practical administrative and organizational responsibilities coaches encounter. Realistic problem-solving is stressed.

**PHED 310/HLTH 310 Early Professional Experience.**

Semester course; 3 laboratory hours. 1 credit. Opportunities are provided for observation and experience with professionals in the health and physical education fields. Designed for the students entering the fields to explore specific areas on campus or in the community.

**PHED 330 Motor Behavior.**

Semester course; 3 lecture hours. 3 credits. This course is designed to introduce the student to the major concepts of motor control and motor learning and the influencing conditions. It will provide a framework for understanding the structure and function of the nervous system in relation to perception and motor control. Other topics include the general nature of skill acquisition and how learners interact with the environment while performing motor tasks. The theoretical framework underlying learning and memory are related to the acquisition of motor skills.

**PHED 382 Survey of Kinesiology and Physiology of Exercise.**

Semester course; 3 lecture hours. 3 credits. Examines the basic concepts of human biomechanics and exercise physiology. Includes basic and applied kinesiology and metabolic, endocrinological, cardiovascular, and respiratory responses and adaptations to exercise. Emphasizes the integration of kinesiological and physiological principles.

**PHED 390 Physical Education for the Elementary Teacher.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Methods and curriculum planning in physical education for the elementary school teacher and physical education specialist. Emphasis is placed on using activities and games to foster the growth and development of the child with a focus on the psychomotor and affective domains.

**PHED 391 Elementary Physical Education for Majors.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Designed to enhance knowledge of elementary physical education through an analysis of the aims, goals, objectives, programs, and teaching methods. Construction of year-round curriculum and daily lesson plans. Emphasis also placed

upon the acquisition of administrative and organizational knowledge dealing with facilities, equipment, teaching aids, testing, measurement, and safety.

#### **PHED 392 Kinesiology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: BIOL 205 or permission of instructor. A study of the anatomical and mechanical principles of human movement. Topics include concepts of functional anatomy and the actions of internal and external forces as applied to sport, physical activity and rehabilitation.

#### **PHED 398/HLTH 398 Curriculum in Health and Physical Education.**

Semester course; 3 lecture hours. 3 credits. Curriculum planning will include key aspects in the development of school health and physical education programs. Preparations and development strategies for course outlines, unit/lesson plans, and the writing of behavioral objectives are highlighted. Related subject areas, trends, and problems also are examined.

#### **PHED 400 Independent Study.**

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

#### **PHED 401 Clinical Assessment in Exercise Science.**

Semester course; 2 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHED 392 and PHED 492. Designed for students in the clinical exercise science and rehabilitative fields. Emphasis is placed on the physical and performance assessment of the spine, body extremities, musculoskeletal function, goniometry, and gait.

#### **PHED 402 Clinical Interventions in Exercise Science.**

Semester course; 2 lecture and 1 laboratory hour. 3 credits. Prerequisite: PHED 401. Designed for students in the clinical exercise science and rehabilitative fields. Emphasis is placed on rehabilitative techniques as an integral part of comprehensive care and its application to restore persons with physical impairments to the optimal level of functional independence. Topics include neurological dysfunction, orthopedic, prosthetic, orthotic, respiratory, cardiac and aquatic rehabilitation.

#### **PHED 430 Sports Psychology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PSYC 101. Examines various psychological aspects of sports performance. Topics include optimal performance, leadership effectiveness, ethics, stress management, coaching strategies, and motivation. Practical experiences include goal-setting, relaxation training, and cognitive intervention strategies.

#### **PHED 431 Seminar in Applied Fitness.**

Semester course; 3 lecture hours. 3 credits. Open only to senior physical education majors or with permission of instructor. An in-depth study of various fitness areas and settings compatible with student career interests and current

job market trends. Emphasis is placed on the application of knowledge and fundamental fitness principles. Topics include preparing exercise, nutrition, and weight loss, as well as weight and muscle gain prescriptions. Also includes training the elite athlete and designing fitness programs in the school and community.

#### **PHED 432 Movement Education.**

Semester course; 3 lecture hours. 3 credits. For teachers of early childhood elementary and physical education. Emphasis is given to the role of movement and theory in the educational program and its implications for curriculum development and learning. Major consideration is given to the development of movement competency and self-awareness through creativity and exploration.

#### **PHED 433 Psychosocial Aspects of Sport and Physical Activity.**

Semester course; 3 lecture hours. 3 credits. The focus of this course is the scientific study of the behavior of individuals and groups within sport and physical activity in terms of the psychological effects and factors of sport participation, and in terms of the social relationships and social settings within which sport participation occurs.

#### **PHED 439 The Organization, Administration, and Supervision of the Intramural Sports Program.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Experiences in the organization and administration of an intramural sports program. Lecture will be devoted to the theory, philosophy, history, and plans for the conduct of an intramural sports program. Laboratory experience will be obtained by working in intramural programs.

#### **PHED 485 Directed Student Teaching I.**

6 credits. Prerequisite: Admission to the TEDU 310 or equivalent with a grade "C" or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing, and evaluating classroom activities.

#### **PHED 486 Directed Student Teaching II.**

6 credits. Prerequisites: Admission to TEDU 310 or equivalent with a grade "C" or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing, and evaluating classroom activities.

#### **PHED 487 Supervised Field Experiences I.**

6 credits. Prerequisite: Completion of TEDU 310 or equivalent with a "C" grade or better, recommendation of practicum supervisor, and satisfaction of eligibility requirements for student teaching. A practical experience in a community agency or other approved nonschool setting that provides for the efficient application of knowledge, ideas, and skills related to one's occupational objective. Culminates in full responsibility for planning, implementing, and evaluating activities. Does not satisfy student teaching or certification.

#### **PHED 488 Supervised Field Experiences II.**

6 credits. Prerequisite: Completion of TEDU 310 or equivalent with a "C" grade or better, recommendation of practicum supervisor, and satisfaction of eligibility requirements for student teaching. A practical experience in a community agency or other approved nonschool setting that provides for the efficient application of knowledge, ideas, and skills related to one's occupational objective. Culminates in full responsibility for planning, implementing, and evaluating activities. Does not satisfy student teaching or certification.

#### **PHED 492 Physiology of Exercise.**

Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisite: BIOL 206. Physiological changes in the human organism resulting from exercise, investigation of recent research in diet, drugs, fatigue, cardiovascular/respiratory fitness, conditioning programs for various age groups, and the effects of exercise upon various components of physical fitness and health. Application of specific problems to physical education programs. Laboratory experience in the use of research instruments.

#### **PHED 494/HLTH 494 Topical Seminar in Health and Physical Education.**

Semester course; 1-3 credits, repeatable up to six credits. An in-depth study of a topic, issue, or problem in health and/or physical education. See the Schedule of Classes each semester for specific topics to be offered.

#### **PHED 495 Adaptive Physical Education.**

Semester course; 3 lecture hours. 3 credits. Provides an overview of those disabilities found most frequently in public schools. Emphasis is placed on developing understanding of various disabilities and skills in adapting activities to meet the needs and abilities of disabled students.

### **Activity courses**

#### **PHED 100 Experimental Physical Education.**

1 credit.

#### **PHED 101 Foundations of Physical Conditioning: Jogging, Yoga, Weight Training, Swimming, as Specified.**

1 credit.

#### **PHED 102 Fitness and Weight Control.**

1 credit.

#### **PHED 103 Adapted Physical Education.**

1 credit.

#### **PHED 106 Fencing.**

1 credit.

#### **PHED 107 Badminton.**

1 credit.

#### **PHED 108 Gymnastics Survey.**

1 credit.

**PHED 109 Racquetball.**

1 credit.

**PHED 110 Handball.**

1 credit.

**PHED 112 Tennis.**

1 credit.

**PHED 113 Wrestling.**

1 credit.

**PHED 114 Bowling.**

1 credit.

**PHED 115 Rugby.**

1 credit.

**PHED 116 Archery.**

1 credit.

**PHED 117 Golf.**

1 credit.

**PHED 121 Self Defense: Karate or Judo.**

1 credit.

**PHED 125 Basketball.**

1 credit.

**PHED 126 Flag Football.**

1 credit.

**PHED 127 Field Hockey.**

1 credit.

**PHED 128 Soccer.**

1 credit.

**PHED 129 Lacrosse.**

1 credit.

**PHED 137 Volleyball.**

1 credit.

**PHED 138 Team Handball.**

1 credit.

**PHED 139 Track and Field.**

1 credit.

**PHED 150 Beginning Swimming.**

1 credit.

**PHED 151 Intermediate Swimming.**

1 credit.

**PHED 155 Scuba Diving.**

1 credit.

**PHED 156 Synchronized Swimming.**

1 credit.

**PHED 157 Springboard Diving.**

1 credit.

**PHED 158 Aquatic Sports and Games.**

1 credit.

**PHED 200 Strength Training.**

1 credit.

**PHED 201 Endurance and Flexibility Training.**

1 credit.

**PHED 202 Basketball.**

1 credit.

**PHED 204 Softball.**

1 credit.

**PHED 208 Volleyball.**

1 credit.

**PHED 210 Field Hockey.**

1 credit.

**PHED 212 Soccer.**

1 credit.

**PHED 214 Wrestling and Flag Football.**

1 credit.

**PHED 216 Tennis.**

1 credit.

**PHED 226 Recreational and Indoor Racquet Sports.**

1 credit.

**PHED 227 Archery, Badminton, and Bowling.**

1 credit.

**PHED 230 Gymnastics.**

1 credit.

**PHED 233 Track and Field.**

1 credit.

**PHED 234 Elementary Rhythmics.**

1 credit.

**PHED 235 Social Rhythmics.**

1 credit.

**PHED 236 Developmental Activities and Games.**

1 credit.

**PHED 250 Lifeguard Training.**

1-2 credits.

**PHED 251 Water Safety Instruction.**

1-2 credits.

**PHED 356 Organization and Administration of Aquatic Activities.**

1 credit.

**Courses in recreation (RECR)****RECR 195 Recreation Leadership.**

Semester course; 3 lecture hours. 3 credits. Course provides a study of the theories of leadership, group dynamics, and human relationships used in recreation delivery systems. Students acquire and demonstrate practical skills in planning, organizing, leading, participating, and evaluating a wide variety of recreation activities selected from the basic areas of programming such as social recreation, music, dance, drama, arts and crafts, environmental-outdoor recreation, special events, sports and games, linguistics, and hobby clubs.

**RECR 200 Introduction to Outdoor Recreation Activities.**

Semester course; 3 lecture hours. 3 credits. A basic introduction to the theory and practice of outdoor adventure recreation. Emphasis is given to knowledge and understanding of the theoretical and philosophical foundations of participation in outdoor adventure recreation programs. Students will be exposed to an experiential approach to learning. Through involvement with activities, students will develop skills in planning, administering, and evaluating outdoor adventure recreation programs.

**RECR 201L Backpacking.**

Semester course; 2 laboratory hours. 1 credit. Prerequisite: RECR 200 or permission of instructor. An introduction to backpacking. Utilizing lectures, readings, and hands-on-experience, emphasis will be given to the skills and knowledge necessary for safe, low-impact, short-to-moderate-duration travel through back country areas.

**RECR 202L Flatwater Canoeing.**

Semester course; 28 laboratory hours. 1 credit. Prerequisites: RECR 200 and ability to swim, or permission of instructor. Introduction to flatwater canoeing. Utilizing lectures, readings, and on-the-water experience, emphasis will be given to the skills and knowledge necessary for planning and implementing flatwater canoe trips. Topics include safety, locations for trips, equipment, and portaging, as well as the issues of conservation and impact.

**RECR 203L Whitewater Canoeing.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: RECR 202L and ability to swim or permission of instructor. A basic introduction to whitewater paddling, utilizing lectures, readings, and on-the-water experience. Emphasis will be given to the skills and knowledge necessary for planning and implementing whitewater canoe trips, including communication and the structure for leading group trips. Course is taught evenings and weekends as found in the Schedule of Classes.

**RECR 204L Rock Climbing.**

Semester course; 2 laboratory hours. 1 credit. A basic introduction to rock climbing, utilizing lectures, readings, and rock

climbing experiences. Emphasis will be placed on safety, equipment, and conservation, as well as techniques of belaying, climbing, and rappelling. Attention is given to the importance of communication and personal feelings of mastery and success in outdoor adventure recreation. Course is taught evenings and weekends as found in the Schedule of Classes.

**RECR 261 Recreation, Parks, and Tourism in Modern Society.**

Semester course; 3 lecture hours. 3 credits. Introduction to the historical and philosophical foundations of leisure and recreation; implications of continued growth of the leisure phenomenon in contemporary society.

**RECR 300 Wilderness Education I.**

Semester course; 1 lecture hour. 1 credit. Corequisite: RECR 300L. Designed to examine the principal philosophical foundations of adventure theory and wilderness leadership. Concepts of judgment, decision making, leadership and environmentally correct practices are introduced.

**RECR 300L Wilderness Education I Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Corequisite: RECR 300. Designed to practice the principal philosophical foundations of adventure theory and wilderness leadership through field experiences.

**RECR 301 Wilderness Education II.**

Semester course; 1 lecture hour. 1 credit. Prerequisites: RECR 300 and RECR 300L. Corequisite: RECR 301L. Explores the theoretical foundations involved in utilizing the wild outdoors with minimal impact. Principles of wilderness ethics, land stewardship, expedition behavior, and technical skills are introduced.

**RECR 301L Wilderness Education II Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Prerequisites: RECR 300 and RECR 300L. Corequisite: RECR 301. Designed to practice the principles and techniques of wilderness ethics, land stewardship, expedition behavior and back country travel.

**RECR 303 Leisure Delivery Systems.**

Semester course; 3 lecture hours. 3 credits. Evaluation of public, private, and commercial agencies that provide recreation services. Particular emphasis is given to the types of leisure activities offered in relationship to the recreation market.

**RECR 320 Recreation Analysis.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: CSE 241-242. Examines various approaches to the study of leisure. Assesses the use of free time and the expenditure of time and money to fulfill leisure needs.

**RECR 331 Recreation Site Selection and Analysis.**

Semester course; 3 lecture hours. 3 credits. An overview of the site selection and development processes will be analyzed as individual elements and the interrelationships among all the elements will be reviewed. Consideration will be given to the social, political, physical, and legal aspects of the park planning process.

**RECR 332 Recreation Site Design and Development.**

Semester course; 2 lecture hours. 2 credits. Prerequisite: RECR 331. General principles of planning and development of basic recreation areas and facilities; specific principles of design relating to outdoor recreation facilities; standards relative to space requirements, location, and programs; trends in site design and development.

**RECR 340 Introduction to Sport Management.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MASC 101 and MGMT 421. Acquaints the student with management principles, techniques, and functions related to the business fundamentals of sport. Includes communications, personnel, finance, public relations, legal aspects, facilities and program development.

**RECR 341 Introduction to Travel and Tourism.**

Semester course; 3 lecture hours. 3 credits. Examination of historical perspective, basic policy issues, and social and economic impact of the travel and tourism field. Functions, programs, and objectives of various types of travel and tourism organizations will be studied.

**RECR 371 Introduction to Therapeutic Recreation.**

Semester course; 3 lecture hours. 3 credits. An introduction to services for special populations. Examines the various agencies and institutions which provide such services as well as the professional competency necessary for the delivery of leisure services to the handicapped; the physically, socially, and mentally disabled; and the aged. Introduces the student to client assessment and programming.

**RECR 371L Introduction to Therapeutic Recreation Laboratory.**

2 laboratory hours. 1 credit. Corequisite: RECR 371. This laboratory requires a minimum of 36 contact hours in three specified settings under supervision of certified therapeutic recreation specialists. An introduction to field experience in therapeutic recreation settings. The acquisition of field experience concurrent with classroom introductory material regarding leisure services for populations with physical, mental, emotional, or social limitations, offers professional practice, individualized feedback, and a holistic view of therapeutic recreation service for students.

**RECR 395 Recreation Program Development.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RECR 195. Principles of recreation program development; intensive study of the recreation program areas available to participants; analysis of the methods and techniques of program implementation and program evaluation.

**RECR 403 Management of Recreation, Park, and Tourism Agencies.**

Semester course; 3 lecture hours. 3 credits. Principles of the administrative process. Deals with basic procedures of recreation administration, with particular emphasis on legal foundations, organizational structure, management theory, personnel practices and policies, legal liability, activity and liability insurance.

**RECR 404 Revenue Sources for Parks and Recreation.**

Semester course; 3 lecture hours. 3 credits. Examination of the financing, budgeting, and marketing techniques used to develop and operate leisure service opportunities.

**RECR 431 Advanced Recreation Facilitation Techniques.**

Semester course; 3 lecture hours. 3 credits. The course provides a study of advanced leadership, group dynamics, and human relationships used in leisure delivery systems. Students acquire skills in facilitation techniques including decision-making, problem-solving, conflict management, and evaluation strategies.

**RECR 440 Administration of Sport Facilities.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHED 340. Examines the planning, construction, programming, staffing, and use of sport facilities through classroom and field experiences. Studied from the standpoint of the development process. Covers planning processes, and the maintenance of outdoor and indoor athletic, physical education, fitness and sport facilities.

**RECR 441 Law and Sport.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: PHED 340. Presents the legal aspects of sport/activity service systems. Emphasizes regulations in amateur athletics, liability for injury in sport activities, antitrust laws, facility accommodation for persons with special needs, and strategies to prevent legal action.

**RECR 442 Group Travel Management.**

Semester course; 3 lecture hours. 3 credits. A study of the processes and procedures involved in the planning and organization of group travel. Emphasis will be given to the economic and political dimensions of travel, deregulation, how travel agencies function, professional liability, and future trends in the field.

**RECR 445 Conference and Convention Planning.**

Semester course; 3 lecture hours. 3 credits. The planning, organizing, promoting, and implementing of conferences and conventions. Included will be the development of conference programming, financing, and public relations as well as negotiations with meeting facilities, hotels, and food services agencies.

**RECR 461 Recreation Resource Management.**

Semester course; 3 lecture hours. 3 credits. A comprehensive overview of recreation resource management institutions, both public and private. Emphasis is given to the public sector at the federal, state, and local levels. Professional, service, and educational organizations contributing to outdoor recreation are examined. The legal framework operating within recreation resource management also is covered.

**RECR 465 Park Operations and Maintenance.**

Semester course; 3 lecture hours. 3 credits. The purpose of this course is to gain an understanding of the concepts, principles, and practices of park operations and maintenance. Quantitative and qualitative resource evaluation will be emphasized. Special consideration is given to methods and techniques for determining management and operations policies.

**RECR 471 Clinical Practice and Procedures in Therapeutic Recreation.**

Semester course; 3 lecture hours. 3 credits. Designed to equip students with the knowledge and skills required of therapeutic recreation specialists in clinical practice. Exposure to standards of practice, activity analysis, documentation, and holistic approaches to delivering services will be included.

**RECR 472 Therapeutic Recreation Program Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: RECR 371; open to therapeutic recreation option majors only. Instructs students in the techniques of assessment, planning, implementation, and evaluation of therapeutic recreation programs for a variety of clients with special needs.

**RECR 473 Leisure and the Aged.**

Semester course; 3 lecture hours. 3 credits. An analysis of the leisure needs of the aged. The need for specialized leisure programs for the aged in a variety of community and institutional settings will be explored. Preretirement counseling will be emphasized.

**RECR 475 Recreation in Correctional Settings.**

Semester course; 3 lecture hours. 3 credits. A survey of recreational needs of inmates in adult and juvenile correctional institutions, short-term institutions, and community-based correctional institutions. The development of specialized programming and the role of recreation in the rehabilitative process will be examined.

**RECR 476 Leisure Counseling.**

Semester course; 3 lecture hours. 3 credits. An introduction to the theory and application of leisure counseling for the general public and those with special needs. The use of leisure counseling as a means of client evaluation and assessment also will be examined.

**RECR 480 Specialized Recreation Programs for Handicapped Children.**

Semester course; 3 lecture hours. 3 credits. Development of recreation programs for handicapped children in schools, other institutions, and community settings. Consideration will be given to the development of leisure skills and goal accomplishments.

**RECR 490 Seminar.**

Semester course; 3 seminar hours. 3 credits. Advanced seminar in recreation, parks, and tourism that analyzes in-depth special problem areas and current issues. Independent research on special projects.

**RECR 491 Topics in Recreation.**

Semester course; 3 lecture hours. 3 credits. Maximum six credits per semester; maximum total of nine credits in all departmental topics courses that may be applied to the major. An in-depth study of specific content areas in recreation, park, and tourism operations. See the Schedule of Classes for specific topics to be offered each semester.

**RECR 492 Independent Study in Recreation.**

Semester course; 16 credits. Prerequisite: Permission of

departmental chair. Under the supervision of a faculty member, the student selects a topic of concern to investigate. Each student must present his/her findings in writing and pass an oral examination before a faculty committee.

**RECR 493 Internship.**

Semester course; 8-12 variable credits. Prerequisites: Senior standing and a minimum of 21 credits in major. Opportunities are offered for the student to gain practical experience in a variety of public, private, and commercial agencies. The student will complete a comprehensive field placement in an approved setting that will consist of 40 hours per week for 10 to 16 weeks. Each 50 hours of supervised experience equals one credit hour.

**RECR 506 Contemporary Issues in Therapeutic Recreation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: RECR 371, 472 or equivalent. An examination of contemporary issues affecting the delivery of leisure services and programs to disabled persons. Both the scope and nature of leisure opportunities available to disabled individuals are considered.

**RECR 510 Tourism Policy.**

Semester course; 3 lecture hours. 3 credits. The examination of tourism policy with emphasis upon components involved in the formulation and implementation of public policy. The course will include an analysis of the legislative programs of regional and national tourism organizations.

**Courses in reading and study skills (RDSS)****RDSS 100 Reading and College Study Skills.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study of effective reading and study skills at the college-level. Emphasis is placed on vocabulary development as well as reading and study strategies.

**RDSS 101 Advanced Reading, Study, and Communication Skills.**

Semester course; 3 lecture and laboratory hours. 3 credits. Prerequisite: RDSS 100, adviser's recommendation, or instructor's permission. A study of advanced reading and study skills at the college-level. Students develop and apply critical reading-thinking skills, library research skills, and advanced vocabulary.

**Courses in teacher education (TEDU)****TEDU 203 Focus on Choice.**

Semester course; 3 lecture hours. 3 credits. A career planning experience for adults focusing on discontinuity in life patterns and a review of current educational and occupational opportunities. Consideration of the world of work, fields of education and volunteer service, and the development of one's own potential will be featured.

**TEDU 307/ENGL 307 Teaching Writing Skills.**

Semester course; 3 lecture hours. 3 credits. Studies the theory and methods for teaching writing to students in middle

and secondary schools. Teaches strategies for prewriting, composing, peer revision, evaluation, and topic construction. Includes extensive journal and essay writing. May not be used to satisfy the literature requirements of the College of Humanities and Sciences.

**TEDU 310 Practicum.**

1-3 credits. May be repeated for a maximum of six credits. A field placement that precedes student teaching, the nonschool supervised experience, or the internship. Includes planned observations, tutorials, and small group involvement.

**TEDU 330 Survey of Special Education.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisite for all other undergraduate special education courses. For majors and nonmajors. An overview of the field of special education. Includes current trends, legal issues, definitions, etiology, identification, characteristics, and appropriate services for children and adults with a range of exceptionalities.

**TEDU 331 Human Interaction in Teaching.**

Semester course; 3 lecture hours. 3 credits. Develop skills teachers use in interactions with students, family members, and other helping professionals, for relationship building, communication, affective education, teamwork, and consultation.

**TEDU 351/ENGL 351 Children's Literature I.**

Semester course; 3 lecture hours. 3 credits. Designed to give students an appreciation of values of children's literature; includes biography, fable, myth, traditional and modern fanciful tales, and poetry, as well as a survey of the history of children's literature.

**TEDU 400 Independent Study.**

Semester course; 1-6 hours. 1-6 credits. Opportunities are provided for supervised research and independent study in selected areas. Designed for advanced students. All work offered on an individual basis with the approval of instructor and departmental chair.

**TEDU 407 Educational Media: Utilization.**

Semester course; 3 lecture hours. 3 credits. The study and use of audio-visual equipment and aids, and means for using them for more effective presentations to groups.

**TEDU 414 Curriculum and Methods for Young Children.**

Semester course; 4 lecture hours. 4 credits. Prerequisite: Admission to teacher preparation program. Corequisite: TEDU 310. A study of developmentally appropriate curriculum and methods for young children, including diversity, behavior guidance and management, planning, learning environments, curriculum, and assessment of the whole child. Includes an overview of the history of early childhood education and issues currently facing the profession.

**TEDU 426 Teaching Reading and Other Language Arts.**

Semester course; 3 lecture hours. 3 credits. Presents teaching strategies and materials in reading and the other language arts based on current theory and research. Emphasizes the interrelatedness of listening, speaking, reading and writing and the importance of naturalistic language experiences.

**TEDU 433/ENGL 433 Literature for Adolescents.**

Semester course; 3 lecture hours. 3 credits. Designed to acquaint the prospective middle and secondary school English teacher with the nature, scope, and uses of adolescent literature. The student is acquainted with reading materials for meeting the varied needs and interests of adolescents.

**TEDU 461 Teaching Persons with Mental Disabilities.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Permission of instructor. Taken concurrently with TEDU 310. Curriculum development and organization of activities for the mentally retarded at different maturational levels with specific attention to program content equipment, materials, and resources.

**TEDU 468 Educational Diagnosis of Exceptional Individuals.**

Semester course; 3 lecture hours. 3 credits. Study and simulation of basic assessment techniques and their use in determining the nature and extent of learning problems in educational placement decisions and in individual program development and implementation.

**TEDU 485 Directed Student Teaching I.**

6 credits. Prerequisites: Admission to TEDU 310 or equivalent with a grade of "C" or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing, and evaluating classroom activities.

**TEDU 486 Directed Student Teaching II.**

6 credits. Prerequisites: Admission to TEDU 310 or equivalent with a grade of "C" or better and recommendation of practicum supervisor. A classroom teaching experience in a public school or other approved setting which includes opportunities for increasing involvement with children. Culminates in full responsibility for planning, implementing, and evaluating classroom activities.

**TEDU 494 Topical Seminar in Education.**

Semester course; variable; 1-3 credits. May be repeated for a maximum of six credits. A seminar intended for group study by personnel interested in examining topics, issues, or problems related to the teaching, learning, and development of students.

# School of Engineering

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**Competitive and innovative, the School of Engineering builds on world-class research and teaching efforts through collaboration with the MCV Campus and the entrepreneurial, industrial and manufacturing sectors of the Richmond area. The school offers its students an integrated education of thought-provoking lectures and hands-on experiences.**



## Undergraduate Programs and Specializations

Biomedical Engineering B.S.  
Chemical Engineering B.S.  
Electrical Engineering B.S.  
Mechanical Engineering B.S.

601 W. Main St.  
P.O. Box 843068  
Richmond, VA 23284-3068  
(804) 828-3647 • Fax (804) 827-7017  
[www.vcu.edu/egrweb](http://www.vcu.edu/egrweb)

#### Robert J. Mattauch

Dean and Commonwealth Professor  
of Electrical Engineering (1996)

B.S. 1962 Carnegie Institute of Technology  
M.E. 1963 North Carolina State University  
Ph.D. 1967 North Carolina State University

#### Gerald E. Miller

Associate Dean for Graduate Affairs and Professor  
and Chair, Biomedical Engineering Program (1996)

B.S. 1971 Pennsylvania State University  
M.S. 1975 Pennsylvania State University  
Ph.D. 1978 Pennsylvania State University

#### Barton B. Cregger

Assistant Dean for Undergraduate Programs  
and Operations (1999) and Assistant Professor  
of Electrical Engineering (1998)

B.S. 1980 University of Virginia  
M.S. 1982 University of Virginia

#### Ronnie J. Price

Assistant Dean for Student Services (1999)  
and Assistant Professor of Engineering (1998)  
B.S. 1989 University of Virginia at Wise (formerly  
Clinch Valley College)

M.S. 1992 University of Virginia  
Ph.D. (ABD) University of Virginia

#### Susan F. Younce

Assistant Dean for Administration and Finance and  
Assistant Professor of Engineering (1981)  
B.A. 1974 University of Richmond  
M.S. 1991 Virginia Commonwealth University

Students are offered an integrated and multidisciplinary curriculum in biomedical, chemical, electrical and mechanical engineering. Supported by the internationally recognized strengths of VCU's Medical College of Virginia Campus and the cutting-edge developments to be generated by the Virginia Biotechnology Research Park, the School of Engineering at VCU has innovative engineering curricula that emphasize creativity and imagination. By encouraging their interaction with practicing engineering professionals, students are continually aware of the real-world application of their research and their studies.

Serving the best and the brightest engineering students and supporting VCU's dedication to diversity by opening doors of opportunity to under-represented populations in the engineering profession, the school continually strives to enrich the technological and intellectual climate of the metropolitan area.

Discovering new knowledge is the goal of the best of the nation's schools of engineering. The School of Engineering at VCU celebrates not only the discovery of knowledge, but also the creative integration and application of that knowledge.

### Curricula

Intellectual creativity and integration, which are essential to a successful engineering career in today's marketplace, are central components of the School of Engineering's mission. The curricula of the School of Engineering offer students a unique opportunity to synthesize intuitive thought with traditional analytical approaches, to mesh a recognition of global, social, political and environmental concerns with traditional reductionist thought. Practical application and innovative theory are firmly joined in the school's curricula. The programs are designed to:

- develop breadth of expertise and individuality of method by encouraging concentration in a second discipline sufficient for a minor,
- require study in international relations and familiarity with culture,
- require study in biological sciences,
- address, via specialized presentations, the complexity and pervasiveness of contemporary issues,

such as ethics and environmental impact,

- foster a student/faculty rapport highly conducive to effective advising, networking and the development of professional interpersonal skills,
- include multidisciplinary study throughout the curriculum, and
- require a summer internship.

The VCU engineering internship offers invaluable hands-on learning experience — an opportunity to make the classroom learning real. Required of all engineering candidates except those students in biomedical engineering, a full-time internship in either a manufacturing facility or a research laboratory is scheduled for a summer prior to the senior year. The curriculum fosters a collaborative model of learning and work, and offers an opportunity for students to combine engineering with a business orientation.

In addition to the curriculum requirements existing for each academic degree program, all students seeking a baccalaureate degree within the School of Engineering are required to fulfill the general education requirements.

### Undergraduate degree programs

The School of Engineering offers bachelor of science degrees as follows:

biomedical engineering  
chemical engineering  
electrical engineering  
mechanical engineering

Students also may be admitted under "Undecided Engineering" for entrance to the School of Engineering. A field of study can be determined after the first semester.

### Double major (B.S.) in engineering and physics

The primary purpose of this double major program is to provide engineering students the opportunity to earn a major in physics, in addition to their major in engineering, in as little as one additional semester. The physics and mathematics requirements for the double major are the same as those for the bachelor of science in physics. Within the double major, however, a select number of engineering courses are acceptable substitutes for required and

### Mission of the school

Founded in 1995 and graduating its first class in May 2000, the School of Engineering is the result of a collaboration rare in the history of higher education in Virginia. Virginia Commonwealth University has, with the support of Virginia Polytechnic Institute and State University, created a school that brings innovative engineering education to central Virginia. Building reciprocal relationships with business and industry in the greater Richmond area, contributing to the region's manufacturing enterprises, and aggressively developing an international orientation, the school has developed programs of research and study that are sensitive to the unique demands of its time and culture.



elective physics/mathematics courses, as given in the list below:

Required Course	Acceptable Substitute
PHYS 340	ENGR 304 Thermodynamics
PHYS 376	EGRE 309 Electromagnetic Fields I
PHYS 450 & 490	ENGR 402 & 403 Senior Design Studio
MATH 515	STAT 541 Applied Statistics

Required Course	Acceptable Substitute
PHYS 331	ENGR 224 Electrical Circuits II
PHYS 407	EGRM 436 Engineering Materials
PHYS 407	EGRB 427 Biomaterials
PHYS 432	EGRE 307 Electronic Circuits
PHYS 491	EGRE 435 Fabrication and Laboratory

With regard to general education requirements, students must fulfill the requirements of their primary major.

### Business minor/pre-M.B.A. options

Students may elect to receive a business minor or prepare for graduate study in business school by taking the following courses during the junior and senior years. With proper approval from adviser and program chair, a student may replace certain technical electives with the listed business courses to receive a bachelor's degree in engineering with a business minor.

Other options include an approved program leading to a bachelor's degree in engineering and a master of business administration in five years.

For either option, a detailed course of study and schedule of classes must be presented to and approved by the student's academic adviser and program chair.

Area of study	Minor/pre-M.B.A.	Business minor
Accounting	ACCT 507 or 205	ACCT 202
Finance	FIRE 311	FIRE 311
Statistics	STAT 541	None required
Legal	MRBL 323	MRBL 323
Management	MGMT 319	MGMT 319
Information Systems	INFO 360	INFO 360
Marketing	MRBL 308	MRBL 308
Economics	ECON 500	
	or (210 and 211)	ECON 203 or 205

### Minor areas of concentration

To augment career goals, engineering students may choose in addition to the major, to elect a minor area of concentration for the study of a discipline of

secondary interest. Students interested in pursuing a minor should discuss their intentions with their adviser or the program chair.

A minor designation requires a minimum number of credit hours and a minimum GPA of 2.0 in the minor. The minor becomes official only after the Office of Records and Registration has received the Change of Major/Minor form signed by the chair of the appropriate program.

Minors in mechanical engineering, electrical engineering and chemical engineering are offered by the School of Engineering. These minors are open only to students in the School of Engineering. Engineering students are encouraged to consider pursuing a minor in chemistry for majors in chemical engineering as well as physics, mathematical sciences, business, or physiology by all engineering majors.

### Graduate studies

The Biomedical Engineering Program, which began in 1984, offers advanced training leading to both master's and doctoral degrees. The Biomedical Engineering Program is part of the School of Engineering but is located on the MCV Campus and has well-established ties to the schools on the MCV Campus. The Biomedical Engineering Program also participates in the M.D./Ph.D. program with the School of Medicine.

Through a cooperative agreement with Virginia Tech, students in the Biomedical Engineering Program may access courses and/or research opportunities at Virginia Tech. The Commonwealth Graduate Engineering Program, coordinated by VCU, delivers master of science degree offerings from the University of Virginia, Virginia Tech and Old Dominion University via interactive video telecommunications (refer to the Graduate Bulletin for details).

### Admissions

Applicants to the School of Engineering are required to submit at least 20 high school units with the following minimum distribution of subjects: four units in English, four units of mathematics (through advanced algebra and trigonometry), three units of science (which must include biology, chemistry and physics), and three units of history

or social sciences or government. Students are encouraged to present at least two units of modern language. A rigorous high school program is recommended.

Students desiring consideration for admission should present:

Minimum GPA:	3.3 (unweighted)
Minimum SAT:	1100
Minimum class rank:	top quarter

Transfer students should have a strong background in mathematics and sciences and should have a minimum GPA of 3.0 on a 4.0 scale. See the "Transfer Policies" section for details.

A one-page essay on the topic "Why I Wish to Study Engineering" should accompany the application for admission. A personal interview and/or letters of recommendation from teachers might be requested at the discretion of the faculty.

### STAR: Student Testing, Advising and Registration

STAR is a one-day, mandatory program designed to help entering VCU students get off to a good start with their college careers.

As the name implies, this program consists of a full day of orientation for students new to the university, both those students entering directly from high school and transfer students.

A usual STAR day begins with an introductory presentation given by a dean from the school/college from which the student has been admitted. This presentation typically consists of an overview of the academic programs with special emphasis on those of the freshman and sophomore years. Issues associated with the transition to the university are often reviewed as well as university policies and procedures.

This presentation is followed by the students taking required placement tests. These tests are typically in mathematics and chemistry, as well as possibly a foreign language test. Once the test results are available, students receive one-on-one academic advising with a member of the faculty, and finally, classes are scheduled and the students registered for the upcoming semester.

During STAR, there are opportunities to handle tasks essential to students, such as purchasing a parking

permit, submitting immunization authorizations, opening a bank account, obtaining a VCUCard, etc. The goal is to help the students accomplish all these tasks in one day prior to the start of classes.

STAR is offered for four weeks in the summer and during the week before each semester begins. No fees are assessed for these programs. A brochure with a registration form for STAR is mailed to all admitted students with their acceptance packets.

### Academic policies

Students in the School of Engineering must attain a grade of "C" or better in all engineering courses taken. If a student receives a grade below "C" in any engineering course, that course must be retaken until the student receives a grade of "C" or better.

Students may in some cases be required to take foundation courses as the result of placement tests in order to prepare themselves to enter the required courses in mathematics, sciences or languages. Credit received for these foundation courses does not count towards the baccalaureate degree in engineering.

### Scholarships

Scholarships are available both through the university and through the School of Engineering. University scholarship applications are due by Jan. 1. All applicants to the School of Engineering also will be considered for merit-based engineering scholarships. Please remember that although VCU has a rolling admission policy, engineering scholarship decisions will begin as soon as the university application deadline of Feb. 1 is reached.

### Policy on change of major

Students admitted to university academic units outside the School of Engineering who request a change of major to programs of the School of Engineering must meet the same admission standards as other applicants to the School of Engineering.

Freshman in other schools and the college are expected to meet the same requirements as those students of the entering freshman class of the School of Engineering, namely 1100 minimum

SAT score, 3.3 minimum GPA and class rank in the top quartile. Sophomores and upper division students are required to have a cumulative GPA of "B" or better with no grades below "C" and present an academic record including successful completion of courses in university physics and mathematics, including at least two semesters of calculus and analytic geometry. All applications for a change of major to the School of Engineering must be approved by the individual department chair.

### Appeals to the School of Engineering policies

Students may appeal the above School of Engineering policies. In order to do so, they must prepare a letter to the School of Engineering Policy Appeals Committee stating why they should be given an exception to these policies and providing any documentation required. The letter should be delivered to the associate dean for academic affairs, who will comment on the situation and provide the letter to the committee for consideration.

### Graduation requirements

The bachelor of science curriculum in the School of Engineering requires a minimum of 130 credits and includes undergraduate requirements (see Part VI of this bulletin), general education requirements for the School of Engineering, and departmental major requirements.

### General education requirements

All students seeking a baccalaureate degree within the School of Engineering are required to fulfill the university undergraduate general education requirements in addition to the curriculum requirements of the engineering degree program.

#### 1. Communicating

Students should demonstrate effective oral and written communication skills. They should be able to communicate ideas clearly and effectively, consistent with the standards of the engineering profession.

All engineering students will demonstrate competence in English composition by successfully completing ENGL 101-200 Composition and Rhetoric I-II (3-3), during their freshman and sophomore years.

Both oral and written communication skills will be stressed and developed in all engineering classes, as appropriate. In particular, the two capstone design courses taught in the senior year of each of the three disciplines will be designated as writing intensive courses. In these senior design classes, students will prepare written reports that will be critiqued from both a technical and a writing standpoint. The reports submitted will be redone as required as the students write to learn and ultimately meet the standards of written communication required in industry. Also, the reports on the design projects will be presented orally to their classmates and the public, using state of the art presentation techniques.

#### 2. Ethics

Students will have an understanding of the ethical characteristics of the engineering profession and practice as well as a sensitivity to the socially related technical problems which confront the profession and the engineer's responsibility to protect both occupational and public health and safety. Students will be able to identify and analyze ethical issues in engineering.

Engineering ethics will be introduced in the course ENGR 101 Introduction to Engineering, as well as all other engineering courses, as appropriate. Engineering students also will take one of the following courses in ethics offered by the Department of Philosophy and Religious Studies:

RLST 340 Global Ethics and the World's Religions	3
PHIL 211 History of Ethics	3
PHIL 212 Ethics and Applications	3
PHIL 213 Ethics and Health Care	3

#### 3. Quantity and form

Students will demonstrate a good knowledge of the application of calculus and differential equations in the analysis of engineering problems. They should develop analytical skills and logical reasoning powers regarding the application of these mathematical methods in engineering.

All engineering students will take MATH 200-201 Calculus with Analytic Geometry (4-4) and MATH 301 Differential Equations (3). Physics and engineering analysis courses will be calculus-based.

All students will take a calculus-based course in applied statistics in their junior year. Statistical analysis will be introduced where appropriate in all engineering laboratories and course work.

#### 4. Science and technology

Engineering students will have an understanding of the process and concepts of modern experimental science including laboratory application of the fundamental ideas and methods.

All engineering students will successfully complete CHEM 101 General Chemistry and CHEM 101L General Chemistry Laboratory plus select a course in the life sciences from the following:

BIOL 101 Life Science	3
BIOL 102 Science of Heredity	4
BIOL 103 Environmental Science	4
BIOL 151, 152 Introduction to Biological Sciences I, II	6

**5. Interdependence**

Students will develop an awareness of the strong global interdependence of culture, economics and society and prepare for a possible international career in engineering by successfully completing one internationally focused course in the social sciences and one global culture course in the humanities, including foreign languages (at the intermediate level).

**Courses (1.5 credit minimum) will be selected from the following lists. (Other appropriate courses may be selected with the approval of an adviser.)**

**Social sciences**

POLI/INTL 105 International Relations	3
POLI/INTL 361 Issues in World Politics	3
POLI/INTL 365 International Political Economy	3
ECON 308 Economic Geography	3
ECON 325 Environmental Economics	3
MGMT 319 Organizational Behavior	3
MRBL 378 International Marketing	3
MGMT 418 International Management	3
GEOG 322 World Political Geography	3

**OR****Humanities/languages**

RLST 340 Global Ethics and the World's Religions	3
SPAN 201 Intermediate Spanish	3
FREN 201 Intermediate French	3
GRMN 201 Intermediate German	3
PORT 201 Intermediate Portuguese	3
ITAL 201 Intermediate Italian	3
RUSS 201 Intermediate Russian	3
CHIN 201 Intermediate Chinese	3

**6. Visual and the performing arts**

Students should demonstrate an enhanced understanding of and experience of the various visual and performing arts. They should understand the process of artistic expression and be able to respond to artistic work from a variety of perspectives and contexts.

**Engineering students will take one course (1.5 credit minimum) in an appropriate area of the visual or performing arts from the following list. (Other appropriate courses may be selected with the approval of an adviser.)**

**Art education**

ARTE 121 The Individual in the Creative Process	3
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**Art foundation**

ARTF 101 Conceptualization and Presentation	2
ARTF 121 Introduction to Drawing	2
Communication arts and design	
CARD 191 Studio Topics in Communication Arts and Design	1-3

**OR****Crafts**

CRAF 201 Metalsmithing	4
CRAF 211 Jewelry	4
CRAF 261, 262 Beginning Textiles	4
CRAF 221 Woodworking Techniques	4
CRAF 241 Ceramics: Handbuilding	4

CRAF 242 Ceramics, Wheelthrowing	4
CRAF 251, 252 Introduction to Glassworking	4

**OR****Dance/choreography**

DANC 105 Improvisation	2
DANC 114 Ballet Technique	1-2
DANC 121 Tap Technique	2
DANC 126 African-Caribbean Dance	1-2

**OR****Interior design**

IDES 103 Introductory Studio Course	2
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**OR****Music**

APPM 191-192 Class Lessons in Piano	1-1
APPM 193-194 Class Lessons in Voice	1-1
APPM 195-196 Class Lessons in Guitar	1-1
APPM 197-198 Class Lessons in Organ	1-1
MHIS 117 Computers in Music	1-1

**OR****Painting and printmaking**

PAPR 155-156 Drawing and Painting Basics	1-1
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**OR****Photography**

PHTO 243 Photography	2
PHTO 245 Design Photography I	4
PHTO 392 Film Animation	4

**OR****Sculpture**

SCPT 211, 212 Sculpture	4, 4
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**OR****Theatre**

THEA 107, 108 Introduction to Stage Performance	3-3
THEA 300 The Enjoyment of Theatre	3-3

**7. Humanities and social sciences**

Study in the humanities and social sciences is intended to make engineering students fully aware of cultural traditions as well as relationships in society. As a minimum, students should successfully complete one approved course in the humanities and one approved course in the social sciences. These courses should be selected to broaden the cultural, historical and artistic perspectives of engineering students or otherwise, to widen their interests and to continue their intellectual growth, keeping in mind that these courses are intended to serve personal development and not vocational needs.

**Courses (1.5 credit minimum) will be selected from the following lists. (Other appropriate courses may be selected with the approval of an adviser.) Some of these courses also may satisfy the other general education requirements listed above.**

**Recommended courses in the humanities are:****Art history**

ARTH 103, 104 Survey of Western Art	3, 3
ARTH 145, 146 Survey of Oriental Art	3, 3
ARTH 207 Introduction to Non-Western Art	3

**OR****History**

HIST 101, 102 Introduction to European History	3, 3
HIST 103, 104 Introduction to American History	3, 3

HIST 105, 106 Introduction to African History	3, 3
HIST 107, 108 Introduction to Asian History	3, 3

**OR****Interior design**

IDES 251, 252 Design in Historic Interiors and Architecture	3, 3
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**OR****Literature**

ENGL 201, 202 Western World Literature	3, 3
ENGL 203, 204 British Literature	3, 3
ENGL 205, 206 American Literature	3, 3
ENGL 215 Introduction to Literary Genre	3
ENGL 216 Stories	3
ENGL 236/WMNS 236 Women in Literature	3
ENGL 241 Introduction to Shakespeare	3
ENGL 291 Topics in Literature	3

**OR****Music**

MHIS 100/200 Special Offerings in Music	1-3
MHIS 105 Introduction to Writing Music	3
MHIS 201 Acoustics	3
MHIS 243 Music Appreciation	3
MHIS 250/AFAM 250 Introduction to African-American Music	3
MHIS 271 Jazz History and Literature	3
MHIS 280 Survey of 20th Century American Popular Music	3
MHIS 303, 304 Piano Literature	3

**OR****Philosophy**

PHIL 104 Modern Western Philosophy	3
PHIL 211 History of Ethics	3
PHIL 212 Ethics and Applications	3
PHIL 213 Ethics and Health Care	3
PHIL 221 Critical Thinking	3

**OR****Religious studies**

RLST 311, 312 Religions of the World	3, 3
RLST 340 Global Ethics and the World's Religions	3

**OR****Theatre**

THEA 307 History of Theatre	3
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**Recommended courses in the social sciences are:****Anthropology**

ANTH 103 Cultural Anthropology	3
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**Economics**

ECON 210, 211 Principles of Economics	3, 3
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**Political science**

POLI 103 U.S. Government	3
POLI 201 Introduction to Politics	3

**Psychology**

PSYC 101 Introduction to Psychology	3
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**Sociology**

SOCY 101 General Sociology	3
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## Policy for honors courses

Engineering students in the University Honors Program may substitute honors modules for those courses listed above under the following guidelines.

Every semester, the director of the University Honors Program will review honors courses to be offered and recommend those considered to be suitable to meet the School of Engineering general education requirements, to the School of Engineering Undergraduate Curriculum Committee for its consideration and approval. The list of those approved by the committee will, in turn, be forwarded to the engineering faculty advisers for their use with the engineering honors students.

## Student advising

Every student admitted to the School of Engineering is assigned a faculty adviser from his/her program of study. The faculty adviser assists the student in planning course work, becoming familiar with university services, interpreting university rules and procedures, and defining career objectives.

While the faculty of the School of Engineering provide timely and accurate information and advice, the student is ultimately responsible for knowing and satisfying the degree requirements of his/her program. Students should be familiar with curriculum requirements, appropriate course sequences, prerequisites and academic regulations.

There are no "free" electives in the curricula of the School of Engineering. **All courses taken by engineering students must be approved by an adviser.**

## University Honors Program

The University Honors Program provides academic and other opportunities for academically superior students. Qualified School of Engineering students may follow a program of study that leads to graduation in the University Honors Program, a complete description of which is given in Part VII of this bulletin.

## Transfer policies

Transfer students who plan to enroll in the undergraduate programs in the School of Engineering must meet the

admission requirements of the university, keeping in mind the following:

1. Calculation of the GPA for admission into the School of Engineering is based on grades earned at all institutions attended.
2. Transfers require a minimum GPA of 3.0 (on a 4.0 scale) with no grades below "C." All courses of "C" or better will transfer except that mathematics, science and engineering courses must be equivalent to those offered by the School of Engineering and be "B" or better in order to transfer.
3. With the exception of general education requirements, transfer of courses from all institutions is limited to courses required by the School of Engineering in the freshman and sophomore years.

The School of Engineering has articulation agreements with J. Sargeant Reynolds Community College, John Tyler Community College and Virginia Union University.

## Accreditation

In keeping with standard procedures, the engineering program is seeking accreditation by the Accreditation Board of Engineering and Technology (ABET) upon graduation of the first class. The ABET team will visit the School of Engineering in fall 2000, so that the first graduates will be accredited retroactively. Program design and standards as well as the commitment of the university are intended to assure accreditation.

## Courses in engineering (ENGR)

### ENGR 101 Introduction to Engineering.

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Corequisites: CHEM 101 and laboratory, MATH 200. This course introduces students to the science and art of engineering through basics of electrical, computer, and mechanical systems. This introduction will consider an electromechanical system in modular form. Each module will be studied and decomposed into sub-modules. This process will be repeated until fundamental mechanical and electrical elements are reached.

### ENGR 102 Engineering Concepts — Statics.

Semester course; 4 lecture/laboratory/problem-solving hours (fully integrated). 4 credits. Prerequisites: MATH 200, ENGL 101. Pre- or corequisites: PHYS 207, MATH 201 or permission of the instructor. Student will develop a preliminary understanding of the behavior and design of rigid structures. They are exposed to the pertinent physical (laws of equilibrium) and mathematical concepts. Oral and written communication and teamwork are emphasized.

### ENGR 115 Computer Methods in Engineering.

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 200, CHEM/ENGR 121. This introductory computer course, based on MATLAB, is designed to provide a broad overview of computer methods including matrix manipulation, solution of systems of equations, series representations of functions, numerical differentiation and integration of statistics. Computer methods are presented as a tool to solve problems within the context of materials chemistry, electronics, physics and biology and a strong emphasis will be placed on solving practical, interdisciplinary engineering problems. The lecture course is taught in conjunction with a computer laboratory.

### ENGR 121/CHEM 121 Materials Chemistry I.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Pre or corequisite: MATH 200. Basic concepts of molecular structure and bonding, thermodynamics, and kinetics. Models of atoms and molecules; covalent, ionic and metallic bonds; intermolecular forces; the gas laws, chemical equilibrium, and chemistry of acids and bases; the first and second laws of thermodynamics; chemical kinetics; the ideal (defect-free) solid state. Students cannot receive credit for both CHEM 121/ENGR 121 and CHEM 101-102.

### ENGR 122/CHEM 122 Materials Chemistry II.

Semester course; 2 lecture and 2 recitation hours. 4 credits. Pre or corequisite: MATH 201. Defects in solids and their role in dictating mechanical and electrical properties; glasses; phase diagrams; time-temperature-transformation diagrams; classes of materials (metals, ceramics, polymers and semiconductors); technology of materials systems.

### ENGR 204 Engineering Thermodynamics.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: EGRC 201 and MATH 301. Content includes study of the first, second and third laws of thermodynamics, volumetric properties of pure fluids, heat capacities of solids, liquids and gases, heat of reaction, heat of formation, heat of combustion, heat effects in industrial reactions, temperature scales, entropy and irreversible processes, thermodynamic properties of fluids and mixtures, partial molar quantities, phase equilibria, activity coefficients and correlations, equations-of-state, chemical reaction equilibria, thermodynamics of flow processes, refrigeration and liquefaction, Carnot cycle, engines and work, thermodynamic analysis of steady-flow processes.

### ENGR 291 Special Topics in Engineering.

Semester course; variable 1-5 credits. Prerequisite: To be determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. See the Schedule of Classes for specific topics to be offered and prerequisites. Grade Option: P/F or Normal Letter Grading. Option will be established by the instructor.

### ENGR 301 Transport Phenomena I.

Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHYS 207 and MATH 301 or permission of the instructor. Basic and applied fluid mechanics; fluid

properties; application of the Navier-Stokes equations; macroscopic mass, momentum, and energy balances; dimensional analysis; laminar and turbulent flow; boundary layer theory; friction factors in pipes and packed beds; drag coefficients; compressible flow; flow measurements; numerical simulation; applications to the operation and design of turbo machinery.

### **ENGR 302 Transport Phenomena II.**

Semester course; 3 lecture and 1 laboratory hours. 3 credits. Prerequisites: ENGR 301 or permission of the instructor. Basic and applied mass transfer; diffusion and rate concepts; evaporation; boiling and condensation; dispersion coefficients; stagnant film; falling film; porous membrane; packed bed; numerical simulation; applications to industrial processes.

### **ENGR 303 Junior Seminar.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. This course provides students an opportunity to explore business and leadership topics. Topics include the fundamentals of product design and new product development, manufacturing and quality systems, finances and financial reports, ethics in the workplace, intellectual property, teamwork, leadership and communications. Students will be assigned selected readings, written compositions and oral presentations. This course prepares the student to participate in the Engineering Laboratory/Manufacturing Internship.

### **ENGR 304 Thermodynamics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207 and MATH 301 or permission of the instructor. Fundamental concepts of thermodynamics; first and second law of thermodynamics; entropy and equilibrium; equations of state; properties of pure fluids; molecular interpretation of thermodynamic properties; phase equilibria; work and heat; power cycles; chemical reactions.

### **ENGR 305 Sensors/Measurements.**

Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHYS 208 and MATH 301 or permission of the instructor. Introduction to sensors and their utilization for measurement and control; sensor types: electro-mechanical, electro-optical, electro-chemical; applications in medicine, chemical manufacturing, mechanical control, and optical inspection.

### **ENGR 315 Process and Systems Dynamics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301. Undergraduate course covering the analysis of chemical, fluid, mechanical and electrical dynamic systems. Pedagogically, a single approach is taught that applies to any of the systems in any of these disciplines using conservation equations and constitutive relationships to build the systems of differential equations needed for the analysis. The mathematical structures of the types of differential equations typically generated in dynamic physical systems are reviewed and both analytical and numerical solution techniques are taught. Finally, the tools used to develop control components for systems in these areas are covered along with the mathematical tools (e.g., Laplace transforms) needed for their analysis.

### **ENGR 334 Introduction to Microelectronic Fabrication.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. This course gives an overview of the integrated circuit fabrication and testing process for a general audience. A wide variety of new terms, equipment and processes are presented. Fundamentals of photolithography, mask making, diffusion, oxidation, chemical vapor deposition and etching are covered. Laboratory work consists of safety training, facility operation, wafer cleaning, oxidation, photolithography, etching, diffusion, metal deposition and electrical testing. A complete metal gate PMOS circuit will be fabricated in the laboratory portion of the course.

### **ENGR 402-403 Senior Design Studio (Seminar).**

Continuous course; 1 lecture hour. 1-1 credits. Prerequisites: Senior standing and participation in a senior design (capstone) project. This weekly seminar presents and discusses topics relevant to senior-level engineering students in support of the capstone project and upcoming graduation. A single course coordinator manages and administers the course and schedules the various faculty lectures and guest speakers. Topics include, but are not limited to, the following: proposal writing, project planning and management, scheduling resources and budgeting for technical projects, patents and intellectual property, quality systems (six sigma, ISO standards, statistical process control), entrepreneurship, creativity and innovation, and professional registration.

### **ENGR 402L-403L Senior Design Studio (Laboratory/Project Time).**

Continuous course; 6-6 laboratory hours. 2-2 credits. Prerequisite: Senior standing and participation in a senior design (capstone project). A minimum of six laboratory hours per week dedicated to the execution phase of the senior design (capstone) project. Tasks include: team meetings, brainstorming, sponsor advising, designing, fabrications, assembling, reviewing, studying, researching, testing and validating projects.

### **ENGR 410 Review of Summer Internship.**

Semester course; 1 credit. Prerequisites: Senior standing or permission of the instructor. Engineering products, manufacturing systems design, or research projects carried out in an work environment either on the factory floor or in an industrial or university laboratory. Students will have practical and "hands-on" experience in a "real world" situation. Written and oral presentations will be required.

### **ENGR 427 Robotics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Introduction to the state-of-the-art and technology of robotics and its applications for productivity gain in industry.

### **ENGR 430 Process Modeling and Simulation.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Senior standing in chemical engineering. Process modeling and simulation are an integral part of process design and analysis. This course continues training in the derivation of steady-state and dynamic mass and energy balances. Emphasis is placed on the use of student-written and commercially available software to develop and analyze models

for individual process units (a single reactor or distillation column), process modules (combination of a reactor, crystallizer, centrifuge and dryer), and entire plant flowsheets.

### **ENGR 454 Automatic Controls.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 335 or ENGR 305. This course covers the design and analysis of linear feedback systems. Emphasis is placed upon the student gaining mathematical modeling experience and performing sensitivity analysis. The use of compensators to meet systems design specifications will be treated. Topics include: an overview and brief history of feedback control, dynamic models, dynamic response, basic properties of feedback, root-locus, frequency response and state space design methods. The laboratory will consist of modeling and control demonstrations and experiments single-input/single-output and multivariable systems, analysis and simulation using matlab/simulink and other control system analysis/implementation software.

### **ENGR 490 Engineering Seminar.**

Semester course; variable 1-3 credits. May be repeated with different content. Prerequisite: Permission of the instructor. A series of specialized topics in engineering that are of general interest but not covered by an existing course or program. Lectures will be presented in seminar format by speakers from business, industry, government and academia. Subjects will be multidisciplinary in nature. Grade Option: P/F or normal letter grading. Option will be established by the instructor.

### **ENGR 491 Special Topics in Engineering.**

Semester course; variable 1-5 credits. Prerequisite: Determined by the instructor. Specialized topics in engineering designed to provide a topic not covered by an existing course or program. General engineering or multidisciplinary. May be repeated with different content. See the Schedule of Classes for specific topics to be offered and prerequisites. Grade Option: P/F or normal letter grading. Option will be established by the instructor.

### **ENGR 492 Independent Study in Engineering.**

Semester course; variable 1-5 credits. May be repeated with different content. Prerequisite: Permission of the instructor. Students must submit a written proposal to be approved by the supervising instructor prior to registration. Investigation of specialized engineering problems that are multidisciplinary or of general interest through literature search, mathematical analysis, computer simulation, and/or laboratory experimentation. Written and oral progress reports as well as a final report and presentation are required. Grade Option: P/F or normal letter grading. Option will be established by the instructor.

## **Biomedical Engineering Program**

### **Gerald E. Miller**

Associate Dean for Graduate Affairs and Professor and Program Chair (1996)

B.S. 1971 Pennsylvania State University

M.S. 1975 Pennsylvania State University

Ph.D. 1978 Pennsylvania State University

Bowlin, Gary Lee (1997) Assistant Professor  
B.E. 1988 Youngstown State University  
M.S. 1990 University of New Hampshire  
Ph.D. 1996 University of Akron

Fei, Ding-Yu (1985) Associate Professor  
B.S. 1963 Tsinghua University  
M.S. 1965 Tsinghua University  
Ph.D. 1986 Pennsylvania State University

Hsia, Peng-Wie (1990) Assistant Professor  
B.S. 1977 Chung-Yuan University  
M.S. 1981 Northeastern University  
M.S.E. 1984 University of Michigan  
Ph.D. 1987 University of Michigan

Lenhardt, Martin L. (1971) Professor and Associate Chair  
B.S. 1966 Seton Hall University  
M.A. 1968 Seton Hall University  
Ph.D. 1970 Florida State University

Wayne, Jennifer Susan (1991) Associate Professor and Graduate Program Director  
B.S. 1983 Virginia Polytechnic Institute  
M.S. 1984 Tulane University  
Ph.D. 1990 University of California at San Diego

Wetzel, Paul A. (1999) Associate Professor  
B.S. 1974 University of Illinois – Chicago  
M.S. 1979 University of Illinois – Chicago  
S.M. 1983 Massachusetts Institute of Technology  
Ph.D. 1988 University of Illinois – Chicago

Biomedical engineering applies engineering expertise to analyze and solve problems in biology and medicine in order to enhance health care. Students involved in biomedical engineering learn to work with living systems and to apply advanced technology to the complex problems of medical care. Biomedical engineers work with other health care professionals including physicians, nurses, therapists and technicians towards improvements in diagnostic, therapeutic and health delivery systems. Biomedical engineers may be involved with designing medical instruments and devices, developing medical software, tissue and cellular engineering, developing new procedures or conducting state-of-the-art research needed to solve clinical problems.

There are numerous areas of specialization and course work within biomedical engineering. These include (1) **bioinstrumentation**, the application of electronics and measurement techniques to develop devices used in the diagnosis and treatment of disease; this includes heart monitors, intensive care equipment, cardiac pacemakers and many other electronic devices; (2) **biomaterials**, the development of artificial and living materials used for implantation in the human body; including materials used for artificial

heart valves, kidney dialysis cartridges, artificial arteries, artificial hips and artificial knees; (3) **biomechanics**, the study of motion, forces, and deformations in the human body; this includes the study of blood flow and arterial disease, forces associated with broken bones and their associated repair mechanisms, mechanisms of blunt trauma including head injuries, orthopedic systems, and the forces and movement associated with human joints such as the knee and hip; (4) **tissue and cellular engineering**, the application of biochemistry, biophysics and biotechnology towards development of new cellular and tissue systems and an understanding of disease processes; this includes development of artificial skin and organs, cell adherence to artificial materials to prevent rejection by the body, and the development of new genetic cellular systems to treat diseases; (5) **medical imaging**, the development of devices and systems to image the human body to diagnose diseases; this includes the development and data processing of the CAT scan, MRI (magnetic resonance imaging), medical ultrasound, X-ray and PET (positron emission tomography); (6) **rehabilitation engineering**, the development of devices and prosthetics to enhance the capabilities of disabled individuals; this includes design of wheelchairs, walkers, artificial legs and arms, enhanced communication aids, and educational tools for the handicapped.

A unique aspect to the biomedical engineering program is the practicum series, EGRB 101 and 301 which involves biomedical engineering students participating in medical rounds in the MCV hospitals, in medical research laboratories throughout the MCV Campus and the Virginia Biotechnology Research Park, and in medical seminars, case studies and medical laboratories. This unique opportunity is the only one of its kind at any biomedical engineering program in the nation and involves the cooperation of VCU's MCV Hospitals, one of the nation's largest and most prestigious medical centers.

#### Freshman year in biomedical engineering

Fall semester	Credits
CHEM 101 General Chemistry	4
CHEM 101L General Chemistry Laboratory	1

MATH 200 Calculus with Analytical Geometry	4
ENGL 101 Composition and Rhetoric	3
ENGR 101 Introduction to Engineering	4
EGRB 101 Biomedical Engineering Practicum I	2
	18

#### Spring semester

CHEM 102 General Chemistry	4
CHEM 102L General Chemistry Laboratory	1
MATH 201 Calculus with Analytical Geometry	4
ENGR 102 Engineering Concepts	4
PHYS 207 University Physics	5
	18

#### Sophomore year in biomedical engineering

Fall semester	Credits
MATH 301 Differential Equations	3
EGRE 206 Electrical Circuits	3
PHIS 309 Quantitative Physiology	4
PHYS 208 University Physics	5
	15

#### Spring semester

MATH 310 Linear Algebra	3
EGRE 224 Electronic Circuits	4
PHIS 310 Quantitative Physiology	4
ENGL 200 Composition and Rhetoric II	3
EGRM 202 Mechanics of Deformables	3
	17

#### Junior year in biomedical engineering

Fall semester	Credits
EGRB 307 Biomedical Instrumentation	4
EGRB 310 Biomechanics	4
EGRB 301 Biomedical Engineering Practicum III	2
Technical elective	3
General education elective	3
	16

#### Spring semester

EGRB 308 Biomedical Signal Processing	4
EGRB 427 Biomaterials	3
EGRB 303 Biotransport Processes	3
Technical elective	3
General education elective	3
	16

#### Senior year in biomedical engineering

Fall semester	Credits
ENGR 402 Design Studio I	3
Technical elective	3
Technical elective	3
General education elective	3

General education elective	3
	15
<b>Spring semester</b>	
ENGR 403 Design Studio II	3
Technical elective	3
Technical elective	3
General education elective	3
General education elective	3
	15
<b>Total minimum requirement</b>	<b>130</b>

Biomedical engineering students must select all technical electives from one of the four technical elective tracks.

#### Technical elective tracks

##### Premedical track

BIOL 151 Life Science	4
BIOL 151L Life Science Laboratory	1
BIOL 152 Life Science II	4
BIOL 152L Life Science Laboratory II	1
BIOL 218 Cell Biology	3
BIOL 302 Embryology	4
CHEM 301 Organic Chemistry I	3
CHEM 301L Organic Chemistry Laboratory I	2
CHEM 302 Organic Chemistry II	3
CHEM 302L Organic Chemistry Laboratory II	2

##### Biomechanics and biomaterials track

EGRB 405 Finite Elements in Solid Mechanics	3
EGRB 403 Tissue Engineering	3
EGRB 406 Artificial Organs	3
EGRM 420 CAE Design	3
EGRM 421 CAE Analysis	3
EGRM 428 Polymer Processing	3
EGRM 436 Engineering Materials	3
EGRM 437 Introduction to Polymer Engineering	3
EGRM 438 Tribology	3
PHYS 407 Mechanics of Solid Materials	3

##### Rehabilitation engineering track

EGRB 420 Rehabilitation Engineering	3
EGRB 421 Human Factors Engineering	3
EGRB 405 Finite Elements in Solid Mechanics	3
EGRM 420 CAE Design	3
EGRM 421 CAE Analysis	3
HLTH 426 Therapeutic Modalities	3
PHED 330 Motor Behavior	3
PHED 392 Kinesiology	3
PHED 492 Physiology of Exercise	3
HLTH 325 Treatment of Athletic Injuries	3
HLTH 425 Advanced Treatment of Athletic Injuries	3
PHED 495 Adaptive Physical Education	3

##### Instrumentation and electronics track

EGRB 408 Advanced Biomedical Signal Process	3
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EGRB 409 Microcomputer Applications in Biomedical Engineering	3
CHEM 409 Instrumentation Analysis	3
CHEM 409L Instrumentation Analysis Laboratory	1
EGRE 254 Digital Logic Design	3
EGRE 303 Electronic Devices	3
EGRE 307 Integrated Circuits	4
EGRE 309 Electromagnetic Fields	3
EGRE 310 Microwaves and Photonics	3
EGRE 335 Signals and Systems	3
EGRE 336 Communication Systems	3
EGRE 364 Microcomputers	4
EGRE 426 Computer Organization and Design	3
EGRE 427 Advanced Digital Design	3
EGRE 445 Digital Signal Processing	3
ENGR 454 Automatic Control	3
EGRE 455 Control Systems Design	3

#### Courses in biomedical engineering (EGRB)

##### EGRB 101 Biomedical Engineering Practicum I.

Semester course; 2 lecture hour. 2 credits. Prerequisites: Registration in Biomedical Engineering Program and permission of course coordinator. This course involves the introduction of clinical procedures and biomedical devices and technology to biomedical engineering freshman. Students will tour medical facilities, clinics, and hospitals and will participate in medical seminars, workshops, and medical rounds. Students will rotate among various programs and facilities including biomedical engineering, orthopaedics, cardiology, neurology, surgery, otolaryngology, emergency medicine, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics, and internal medicine.

##### EGRB 301 Biomedical Engineering Practicum III.

Continuous course; 2 lecture hours. 2 credits. Prerequisites: Registration in Biomedical Engineering Program as a junior or higher classification and permission of course coordinator. This course involves the introduction of biomedical and clinical research programs and procedures and biomedical devices and technology to biomedical engineering juniors. Students will tour medical research facilities, clinics, and hospitals and will participate in medical seminars, workshops, and medical research projects. Students will rotate among various programs and facilities including biomedical engineering, orthopaedics, cardiology, neurology, surgery, otolaryngology, pharmacy, dentistry, nursing, oncology, physical medicine, ophthalmology, pediatrics, anatomy, physiology, biochemistry, and the Virginia Biotechnology Research Park. Continuation of EGRB 101 and 201.

##### EGRB 303 Biotransport Processes.

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and 310 (or equivalents), EGRB 310, PHYS 208, CHEM 102. This course involves the study of mass, momentum and heat transfer within the human body, between the human body and the environment, and in the design of devices and systems that are involved with transport processes in a medical and clinical setting. The underlying principles of mass, momentum and energy transfer will be addressed followed by a study of such processes that are

ongoing in the human body. The design of biomedical devices and systems that involve transport processes also will be studied.

##### EGRB 307 Biomedical Instrumentation.

Continuous course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: Junior Standing in engineering, at least two courses in electrical circuits. A study of the physical principles, design and clinical uses of biomedical instrumentation. Analysis and design of low frequency electronic circuits, pulse circuits and digital circuits which are most frequently used in biomedical instruments will be conducted. Analysis of biosensors, biopotential electrodes, the measurements of biopotential signals including electrocardiogram (ECG), electroencephalogram (EEG) and electromyogram (EMG), blood pressure, blood flow and respiratory system also will be conducted. A knowledge of basic electrical circuits is a prerequisite as is a knowledge of calculus and differential equations. Laboratory work on basic biomedical electronics and instrumentation will be performed.

##### EGRB 308 Biomedical Signaling Processing.

Continuous course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: Calculus, differential equations, linear algebra, programming language. This course explores the basic theory and application of discrete-time signal processing techniques in biomedical data processing. Topics include discrete-time signals and systems, the Discrete Fourier Transforms (DFT), the Fast Fourier Transforms (FFT), digital filter design and implementation, and an introduction into processing of discrete-time random signals and multidimensional systems. Numerous biological signals and their processing are introduced. Specific examples using electrocardiograms will be learned. Laboratory works are required in this course.

##### EGRB 310 Biomechanics.

Semester course; 3 lecture and 2 laboratory hours. 4 credits. Prerequisites: EGRM 202 and MATH 301. This first course in biomechanics will analyze the forces, stresses, and strains in the human body during normal function. Emphasis will be placed on certain parts of the human body including hard (bone) and soft (cartilage, ligaments, tendons) tissues. A knowledge of statics and the mechanics of deformable bodies is required as is a knowledge of calculus, differential equations and linear algebra. Exposure to human anatomy and physiology is also necessary, however, more in-depth anatomic study of the different parts of the body will be part of the material covered.

##### EGRB 403 Tissue Engineering.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in engineering, at least one course in physiology or anatomy. Study of the design, development, and clinical application of tissue engineered components for use in the human body. Analysis of biology, chemistry, material science, engineering, immunology, and transplantation as pertains to various tissue engineered components including blood vessels, bone, cartilage, pancreas, liver, and skin.

##### EGRB 405 Finite Element Analysis in Solid Mechanics.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRB 310 and MATH 301. Finite element analysis as presented

in this course is a numerical procedure for solving continuum mechanics problems that cannot be described by closed-form mathematical solutions. Emphasis will be placed on understanding the theoretical basis for the method, using a commercial software program, and understanding the volume of information that can be generated. Applications to both one- and two-dimensional problems in solid mechanics and biomechanics will be explored.

#### **EGRB 406 Artificial Organs.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and 310 (or equivalents), EGRB 303, EGRB 310, and EGRB 307. This course explores the design, operating principles and practices regarding artificial organs and their use in the human body. Analysis of dialysis systems for kidney replacement, artificial hearts and heart assist devices, cardiac pacemakers, sensory organ assist and replacement devices, and artificial liver and pancreas devices. Design aspects, legal ramifications, regulatory issues and clinical implantation issues will be addressed.

#### **EGRB 407 Physical Principles of Medical Imaging.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior standing in engineering, at least two courses in electrical circuits. A study of the physical principles and basic clinical uses of medical imaging. Analysis of radiation and interaction of radiation, generation and control of X-rays, X-ray diagnostic methods, X-ray computed tomography (CT), magnetic resonance imaging (MRI) and ultrasonic imaging will be conducted. Basic principle of radionuclide imaging will also be introduced. A knowledge of basic electrical circuits is a prerequisite as is a knowledge of wave propagation, calculus and differential equations.

#### **EGRB 408 Advanced Biomedical Signal Processing.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 308. This course will briefly review the basic theory of discrete-time signal processing techniques in biomedical data processing. The focus of this senior level biomedical signal processing is to explore the topics that are currently being investigated in the biomedical literature. Specific examples utilizing electrocardiogram (ECG) and other biological signals are provided. Some current topics covered are alternance phenomenon in biological system, late potential in ECG, intrapotentia in ECG and coherence analysis. These topics usually use the following advanced signal processing techniques including adaptive signal processing, spectral estimation, multirate signal processing, etc. Specific examples using electrocardiograms will be learned.

#### **EGRB 409 Microcomputer Applications in Biomedical Engineering.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: EGRB 307. This course services as the junior or senior selectives for students who are in the electrical concentration of the Biomedical Engineering Program. A background on EGRB 307 or its equivalent are strongly recommended prior to the course. This course teaches microcomputer applications (hardware and software) and solutions for the biomedical engineer. Previous experiences with PC hardware and software are very useful for this class; although, they are not required.

#### **EGRB 420 Rehabilitation Engineering.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and 310 (or equivalents), EGRE 206 and 224 (or equivalents), EGRB 310. This course explores the principles and practices regarding rehabilitation engineering and the interaction of biomedical engineering with health care delivery to disabled individuals. Discussions of approaches to diagnosis and treatment of disorders involving motor and cognitive function will be included as will an analysis of the design of devices and systems to aid the disabled. Chronic disabilities such as cerebral palsy, muscular dystrophy and spinal cord disorders will be used as examples as will acute disabilities resulting from traumatic injuries.

#### **EGRB 421 Human Factors Engineering.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHIS 309 and 310 (or equivalents), and EGRB 310. This course explores the principles and practices regarding ergonomics and human factors engineering and the interaction of biomedical engineering with human function. Analysis of the functions of the human body regarding motion, sensory mechanisms, cognition and interaction with the environment will be included. Interactions of the human body with technology, workplaces, equipment and computers will be examined. Design of workplaces for optimal human performance will be discussed. Analysis of lifting of heavy objects, design and arrangement of controls and displays, and interaction of humans to extreme work and environmental conditions will be incorporated.

#### **EGRB 427 Biomaterials.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Junior standing in engineering, at least one course in physiology or anatomy. Analysis of physical, chemical, thermal and physiological response factors associated with materials and implant devices used in the human body. Study of the properties of biomedical materials used as implants, prostheses, orthoses and as medical devices in contact with the human body. Computer modeling and experimental studies.

### **Chemical Engineering Program**

#### **Gary E. Wnek**

Professor and Program Chair (1996)  
B.S. 1977 Worcester Polytechnic Institute  
Ph.D. 1980 University of Massachusetts, Amherst

El-Shall, M. Samy (1989) Professor of Chemistry and Affiliate Professor of Chemical Engineering  
B.Sc. 1976 Cairo University  
M.Sc. 1980 Cairo University  
Ph.D. 1985 Georgetown University  
Fenn, John B. (1994) Research Professor of Chemistry and Affiliate Professor of Chemical Engineering  
B.A. 1937 Berea College  
Ph.D. 1940 Yale University  
Guiseppi-Eli, Anthony (1998) Professor  
B.Sc. 1979 University of West Indies  
M.Sc. 1980 University of Manchester Institute of Science and Technology  
Sc.D. 1983 Massachusetts Institute of Technology

Gulla, Frank (1999) Adjunct Assistant Professor of Chemical Engineering and President, the Gulla Group  
B.S. 1974 Massachusetts Institute of Technology  
Haas, Thomas W. (1983) Professor  
B.S. 1961 State University of New York, Buffalo  
M.S. 1962 Pennsylvania State University  
Ph.D. 1965 Princeton University  
Huvard, Gary S. (1999) Associate Professor  
B.S. 1974 Campbell College  
Ph.D. 1979 North Carolina State University  
Licata, Mark (1999) Visiting Scholar and President, BioTrack LLC  
B.S. 1982 Carnegie-Mellon University  
M.S. 1988 Carnegie-Mellon University  
Lohr, David (2000) Adjunct Associate Professor and Director of Business Development, Virginia Biotechnology Research Park  
B.S. 1976 Virginia Polytechnic Institute and State University  
M.B.A. 1999 Xavier University  
McGee Jr., Henry A. (1995) Founding Dean, Emeritus and Professor of Chemical Engineering  
B.Ch.E. 1951 Georgia Institute of Technology  
Ph.D. 1955 Georgia Institute of Technology  
McGrath, James E. (1997) Ethyl Professor of Chemistry, Virginia Tech and Adjunct Professor of Chemical Engineering  
B.S. 1956 St. Bernadine of Siena College  
M.S. 1964 University of Akron  
Ph.D. 1967 University of Akron  
McHugh, Mark A. (1999) Professor  
B.S. 1975 Carnegie-Mellon University  
Ph.D. 1981 University of Delaware  
Mishra, Munmaya K. (1997) Senior Scientist, Research and Development, Ethyl Corporation and Adjunct Associate Professor  
M.S. 1978 Berhampur University  
Ph.D. 1981 Utkal University  
Roehl, Joseph (1999) Adjunct Professor and President, Scentzar Corp.  
B.S. 1970 Union College  
M.S. 1973 Union College  
Ph.D. 1979 University of Kansas  
Tepper, Gary C. (1997) Assistant Professor  
B.S. 1987 Pennsylvania State University  
M.S. 1990 University of California, San Diego  
Ph.D. 1993 University of California, San Diego  
Vance, Robert Leonard (1986) Associate Professor of Preventive Medicine and Community Health and Affiliate Associate Professor of Chemical Engineering  
B.S. 1962 Virginia Polytechnic Institute and State University  
Ph.D. 1969 University of Virginia  
J.D. 1975 University of Richmond  
Wynne, Kenneth J. (2000) Professor  
B.S. 1961 Providence College  
M.S. 1965 University of Massachusetts, Amherst  
Ph.D. 1965 University of Massachusetts, Amherst

**Chemical engineering is the most diverse of the engineering disciplines. Chemical engineers find employment in**



the manufacturing of chemicals, metals, plastics, ceramics, foodstuffs, petrochemicals, fertilizers, pharmaceuticals and every material one can think of. They design and build the reactors used to make these materials and invent the processes used to separate and purify the products. They develop waste disposal processes and have a leading role in today's environmental protection research. Chemical engineers are involved in all facets of biotechnology, from research on artificial kidneys to the design and control of biofermentation reactors. Chemical engineers devised the processes needed to produce the special plastics used for artificial joints and developed the membranes used for skin grafts on severely burned patients. They are doing research and development on recombinant DNA technology and designing habitats for NASA space stations. Chemical engineers help design and build nuclear power plants. They helped develop the microlithography processes used to make computer chips and built the plants where plastics used for compact discs are produced.

The ability to work in such diverse fields requires unusually extensive cross-disciplinary training. The chemical engineering degree requires students to develop proficiency in science, mathematics and biological science as adjuncts to mastering chemical engineering course material on mass and energy balances, unit operations, transport phenomena, thermodynamics, reaction engineering, process control, and process design and economics. Additionally, chemical engineering majors are expected to develop considerable written and verbal expertise so additional emphasis is placed on learning composition and rhetoric skills.

#### Freshman year in chemical engineering

	Credits
<b>Fall semester</b>	
CHEM/ENGR 121 Materials Chemistry I	4
CHEM 101L General Chemistry Laboratory	1
MATH 200 Calculus with Analytic Geometry	4
ENGL 101 Composition and Rhetoric I	3
ENGR 101 Introduction to Engineering	4
	16

#### Spring semester

CHEM/ENGR 122 Materials Chemistry II	4
CHEM 102L General Chemistry Laboratory	1
MATH 201 Calculus with Analytic Geometry	4

PHYS 207 University Physics	5
ENGR 115 Computer Methods in Engineering	4
	18

#### Sophomore year in chemical engineering

##### Fall semester

CHEM 301 Organic Chemistry I	3
CHEM 301L Organic Chemistry Laboratory I	2
EGRC 201 Material, Energy and Economic Balances	4
MATH 301 Differential Equations	3
PHYS 208 University Physics	5
	17

##### Spring semester

CHEM/EGRC 322 Organic Chemistry II for Engineers	3
EGRC 310 Chemical, Biochemical and Transport Systems Laboratory I (Organic)	2
ENGR 204 Engineering Thermodynamics	4
ENGL 200 Composition and Rhetoric II	3
BIOL 101, 102, 103 or 151	3
	15

#### Junior year in chemical engineering

##### Fall semester

EGRC 301 Fluid Dynamics/Heat Transfer	3
ENGR 305 Sensors and Measurements	3
EGRC 320 Chemical, Biochemical and Transport Systems Laboratory II (Instruments)	1
EGRC 325 Bioengineering	3
ECON 205 The Economics of Product Development and Markets	3
General education requirement	3
	16

##### Spring semester

EGRC 312 Chemical Reaction Engineering	3
ENGR 315 Process and Systems Dynamics	3
EGRC 330 Chemical, Biochemical and Transport Systems Laboratory III (Inorganic)	1
CHEM/EGRC 306 Industrial Application of Inorganic Chemistry	3
EGRC 302 Mass Transfer and Unit Operations	3
EGRC 340 Chemical, Biochemical and Transport Systems IV Unit Ops Laboratory	1
General education requirement	3
	17

#### Summer

The summer between the junior and senior years is devoted to either a full-time university, industrial manufacturing floor or industrial research laboratory internship. This summer experience is intended to be intense and to have a major component of "hands-on" practice of engineering which will bring the life of "real-world" engineering practice to the classroom.

#### Senior year in chemical engineering

##### Fall semester

ENGR 402 Senior Design Studio I	1
ENGR 402L Senior Design Studio I – Laboratory	2
ENGR 410 Review of Summer Internship	1
STAT 541 Applied Statistics	3
General education requirement	3
Technical elective	3
Technical elective	3
	16

##### Spring semester

ENGR 403 Senior Design Studio II	1
ENGR 403L Senior Design Studio II – Laboratory	2
EGRC 445 Microtechnology	3
Technical electives	3
General education requirement	3
General education requirement	3
	15

#### Total minimum requirement 130

Note: All chemical engineering students must complete a minimum of 130 credit hours in order to graduate. A grade of "C" or better is required in all School of Engineering courses. CHEM/EGRC courses are crosslisted with the Department of Chemistry and co-taught with their faculty. ENGR courses are multidisciplinary courses within the School of Engineering; several are co-taught with members from the other School of Engineering faculty. EGRC courses are chemical engineering specific. Seniors may elect a concentration in chemical process engineering, biotechnology, materials/molecular engineering or multidisciplinary studies (graduate school preparation) by choosing appropriate technical electives.

#### Technical electives

(Some courses may have prerequisites.)

#### Chemical engineering

ENGR 430 Process Modeling and Simulation (Anchor for Process Engineering Concentration)
EGRC 412 Advanced Engineering Mathematics (Anchor for Multidisciplinary Studies Concentration)
EGRC 535 Characterization of Materials (Anchor for Molecular/Materials Engineering Concentration)
EGRC 525 Process Biotechnology with Laboratory (Anchor for Biotechnology and Bioengineering Concentration)
EGRC 350 Research in Chemical Engineering
EGRC 409 Chemical Process Control
EGRC 565 Mechanical Properties of Plastics and Polymers
ENGR 530 Nanostructured Materials

#### Electrical engineering

ENGR 454 Automatic Controls
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#### Biosciences/biotechnology

BIOC 503 Biochemistry, Cell and Molecular Biology
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BIOC 504 Biochemistry, Cell and Molecular Biology  
 BIOC 505, 506 Experimental Biochemistry

#### Biomedical engineering

BIOL 206 Human Physiology  
 EGRB 310 Biomechanics  
 EGRB 307 Bioinstrumentation  
 EGRB 427 Biomaterials  
 EGRB 406 Artificial Organs

#### Manufacturing

EGRM 425 Introduction to Manufacturing Systems  
 EGRM 426 Manufacturing Processes

#### Polymer science and materials engineering

CHEM 550 Introduction to Polymer Chemistry  
 EGRM 428 Polymer Processing  
 CHEM 580 Mechanical Properties of Plastics and Polymers  
 CHEM 691 Topics in Chemistry  
 BIOC 602 Physical Properties of Macromolecules

#### Premedicine and predentistry

BIOL 206 Human Physiology  
 BIOL 218 Cell Biology  
 BIOL 151, 152 Introduction to Biological Science  
 BIOL 151L, 152L Introduction to Biological Science Laboratory

### Chemical engineering policy on technical electives

The chemical engineering program allows students to substitute technical or business courses for two of the three required technical electives as an aid to fulfilling the requirements for a technical minor or second technical major, a business minor or concurrent business major, or as a premedicine or prepharmacy preparation. Thus, all chemical engineering majors are required to complete three technical electives, one of which must be from the EGRC technical electives list. Substitutions for the other two technical electives require approval of the student's academic adviser. Completion of a minor or concurrent major usually requires the student to complete more than 130 credit hours in order to fulfill both the requirements for the baccalaureate degree in chemical engineering and the requirements of a minor or concurrent major option.

### Chemical engineering B.S. degree and M.B.A. in five years

#### Undergraduate program

ECON 210, 211 Principles of Economics	3, 3
ACCT 205 Introductory Accounting Survey	3
MRBL 308 Introduction to Marketing	3
FIRE 311 Financial Management	3

MGMT 319 Organizational Behavior	3
MRBL 323 Legal Environment of Business	3
INFO 360 Business Information Systems	3

#### M.B.A. graduate program

ECON 610 Managerial Economics	3
ACCT 608 Managerial Accounting Concepts	3
ECON 621 Topics in Economics	3
MGMT 641 Organizational Behavior	3
MGMT 642 Business Policy	3
MGMT 645 Operations Research	3
INFO 661 Management Information Systems	3
MRBL 671 Marketing Management	3
M.B.A. Electives (2)	6

### Courses in chemical engineering (EGRC)

#### EGRC 201 Material, Energy and Economic Balances.

Semester course; 3 lecture and 1 recitation hours. 4 credits. Prerequisites: ENGR 102, CHEM 101, and CHEM 102. An introductory chemical engineering course covering material and energy balances with attention given to economic aspects of chemical processes.

#### EGRC 301 Fluid Dynamics and Heat Transfer.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRC 201 and EGRC 204. Basic concepts of momentum and heat transfer as applied to chemical engineering. Topics include fluid statics, flow of compressible and incompressible fluids, flow past immersed bodies, transport and metering of fluids, heat transfer by conduction, convection and radiation, and heat flow with and without phase changes.

#### EGRC 302 Mass Transfer and Unit Operations.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRC 204, EGRC 301. Basic concepts of mass transfer as applied to chemical engineering. Topics include a review of staged equilibria, diffusion, gas absorption, liquid-liquid extraction and mass transport limitations in chemical reactions. The course concludes with an integrated view of momentum, heat and mass transport in unit operations.

#### EGRC 306/CHEM 306 Industrial Applications of Inorganic Chemistry.

Semester course; 3 lecture hours. 3 credits. Prerequisites: Chemical engineering students: EGRC 320, ENGR 301, and ENGR 304; chemistry students: CHEM 302 and 302L. A study and analysis of the most important industrial applications of inorganic chemistry, with emphasis on structure/properties correlation, materials and energy balance, availability and logistics of starting materials, economic impact and environmental effects.

#### EGRC 310 Chemical, Biochemical, and Transport Systems Laboratory I.

Semester course; 2 laboratory periods. 2 credits. Prerequisites: EGRC 201, CHEM 301 and CHEM 301L; EGRC 202 and CHEM 302 are to be taken concurrently. The first of a three-part laboratory sequence introducing students to the planning and implementation of experiments that are representative of modern chemical engineering operations. This course focuses on the synthesis, separation and purification of organic compounds.

#### EGRC 312 Chemical Reaction Engineering.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRC 201, EGRC 204; EGRC 302 is to be taken concurrently. Introduces the student to the analysis of reactors via coupling of empirical reaction rates and thermodynamic constraints with reactor material and energy balances. The behavior of the ideal reactor types (batch, CSTR and PFR) is emphasized with attention given to departure from these ideals by real systems. The use of reaction mechanisms to arrive at reaction rate laws is introduced. Polymerization mechanisms and resulting expressions for propagation rates also are studied. In addition, homogeneous and heterogeneous catalysis is covered in some detail with attention given to the mass transport problems involved in heterogeneous systems. Applications studied during the course include homogeneous liquid and gas phase reactors, heterogeneous reactors, polymerization reactors and bioreactors.

#### EGRC 320 Chemical, Biochemical and Transport Systems Laboratory II.

Semester course; 1 laboratory period. 1 credit. Prerequisites: EGRC 201, 202 and 310; to be taken concurrently with ENGR 301 and 307. The second of a three-part laboratory sequence introducing students to the planning and implementation of experiments that are representative of modern chemical engineering operations. This course focuses on the measurement of selected process parameters (pressure drop, temperature and temperature gradients, time-varying concentrations) and the working and construction of selected sensors.

#### EGRC 322/CHEM 322 Organic Chemistry II for Chemical Engineers.

Semester course; 3 lecture hours. 3 credits. Required course. Prerequisite: CHEM 301 or equivalent. Introduction to industrial organic chemistry with emphasis on chemical feedstocks and petrochemicals, monomers and polymers, biotechnology and fermentation, and fine chemicals and pharmaceuticals. Ideas from chemical process design and economics are introduced through selected case studies.

#### EGRC 325 Bioengineering.

Semester course; 3 lecture hours. 3 credits. Prerequisites: BIOL 101, 102, 103 or 151 and EGRC 201. An introductory and survey level course required for all chemical engineering students. This course introduces concepts and principles of chemical engineering to problems and issues in the life sciences, biotechnology and medicine. Students apply heat and mass transfer concepts, separations and controls to topics that include clinical diagnostics, bioanalytical instrumentation, biosensors and biochips, bioprocess engineering including fermentation, biochemical pathway engineering, protein folding and aggregation, bioreactors and tissue engineering.

#### EGRC 330 Chemical, Biochemical and Transport Systems Laboratory III.

Semester course; 2 laboratory periods. 2 credits. Prerequisites: EGRC 201, 202, 310, 320, and ENGR 301 and 304; to be taken concurrently with CHEM 406 (inorganic Chemistry). The final of a three-part sequence introducing students to the planning and implementation of experiments that are representative of modern chemical engineering operations. This course focuses on industrial inorganic chemistry, and builds on concepts and operations introduced in EGRC 310 and 320.

### EGRC 340 Chemical, Biochemical and Transport Systems IV — Unit Ops Laboratory.

Semester course; 1 laboratory period. 1 credit. Prerequisites: EGRC 301; to be taken concurrently with EGRC 302. Student teams carry out experiments with reactors, crystallizers, filters, dryers, heat exchangers, membrane separation systems, extraction systems, fuel cells, bioseparations systems, and other conventional and high tech unit operations. Emphasis is on application of heat and mass transport theory to describe steady-state and dynamic behaviors observed for a variety of different batch and continuous unit operations and transport systems.

### EGRC 350 Research in Chemical Engineering.

Semester course; up to six credits. Undergraduate research under the supervision of a faculty member. Specific topics vary depending on the interests of the student and the adviser. Registration requires approval of the student's academic adviser and research adviser.

### EGRC 409 Chemical Process Control.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRC 204, EGRC 302 and EGRC 312. Covers process control as applied to chemical engineering with many practical examples. Topics include time and frequency domain analysis, multivariable processes and applications to chemical and biochemical production and processing.

### EGRC 412 Advanced Engineering Mathematics.

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH 301 or equivalent. Advanced topics in engineering mathematics. Topics include partial differential equations, boundary value problems, infinite series, Fourier series, Sturm-Liouville theory, orthogonal functions and the theory of a function of a complex variable. Engineering applications include heat and mass transfer, oscillations in plates and membranes, buckling of columns under axial loads, traveling waves and electromagnetic fields.

### EGRC 415 Special Topics in Chemical Engineering.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Junior or senior standing in chemical engineering. Opportunities frequently arise where VCU faculty, adjuncts and/or visiting faculty wish to offer a course that draws on a particular area of expertise with broad appeal to our undergraduates. This course is reserved for those situations and offers an in-depth treatment of a selected area of contemporary interest in chemical engineering. The topic for a given course will vary depending on interest. Examples of topics that might be offered include colloid and surface science, biotechnology, diffusion in polymers, numerical analysis, supercritical fluids, microtechnology, process safety, materials synthesis and processing, polymer processing, and others. Students should discuss selection of this course with their adviser prior to registration.

### EGRC 428 Introduction to Polymer Science and Engineering.

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRC 301 and CHEM/EGRC 322 or equivalents. This course offers an introduction to the chemistry, physical properties and processing of polymers. Topics include step and chain polymerization, chemical reactions on polymers,

structure/property relationships, mechanical properties of plastics and elastomers, and processing techniques.

### EGRC 445 Microtechnology.

Semester course; 3 lecture hours. 3 credits. Prerequisite: Senior standing or permission of instructor. This course presents an introduction to microscale manufacturing technology and devices. Topics include cleanroom processes, electronic materials, lithographic techniques, oxidation, diffusion, ion implementation, vacuum technology, thin film deposition, etching techniques, bonding techniques, thermal management, stress analysis, injection molding, electronic packaging and process integration, micromachines, microelectromechanical systems (MEMS), microsensors, microfiltration and microreactors (lab-on-a-chip).

## Electrical Engineering Program

### Gregory B. Tait

Associate Professor of Electrical Engineering and Physics and Acting Program Chair (1996)  
B.A. 1982 Amherst College  
M.S.E.E. 1984 University of Maryland  
Ph.D. 1991 Johns Hopkins University

Baski, Alison A. (1996) Assistant Professor of Electrical Engineering and Physics

B.S. 1987 University of Colorado

M.S. 1990 Stanford University

Ph.D. 1991 Stanford University

Bellotti, Enrico (2000) Assistant Professor

L.I.E. 1989 Politecnico di Milano

Ph.D. 1999 Georgia Tech

Carlisle, John A. (1996) Assistant Professor of Electrical Engineering and Physics

B.S. 1986 East Texas State University

M.S. 1988 East Texas State University

Ph.D. 1993 University of Illinois

Chatterji, Anil (1977) Assistant Professor and Director of Computing Services, School of Engineering

M.S. 1978 Virginia Polytechnic Institute and State University

Cregger, Barton B. (1998) Assistant Dean for Undergraduate Programs and Operations and Assistant Professor

B.S.E.E. 1980 University of Virginia

M.S.E.E. 1982 University of Virginia

Docef, Alen (2000) Assistant Professor

Dipl.Eng. 1991 Polytechnic Institute, Bucharest

M.S. 1992 Georgia Tech

Ph.D. 1998 Georgia Tech

Hobson, Rosalyn S. (1996) Assistant Professor

B.S.E.E. 1991 University of Virginia

M.S.E.E. 1995 University of Virginia

Ph.D. 1998 University of Virginia

Hughes, Esther (2000) Assistant Professor

B.S. 1984 N.C. A&T University

M.S. 1986 N.C. A&T University

Ph.D. 1995 Cornell University

Klenke, Robert H. (1998) Associate Professor

B.S.E.E. 1982 Virginia Military Institute

M.S.E.E. 1989 University of Virginia

Ph.D. 1993 University of Virginia

Mattauch, Robert J. (1996) Dean and Commonwealth

Professor of Electrical Engineering

B.S. 1962 Carnegie Institute of Technology

M.E. 1963 North Carolina State University

Ph.D. 1967 North Carolina State University

Morkoc, Hadis (1997) Founders Professor of Electrical

Engineering and Professor of Physics

B.S.E.E. 1968 Istanbul Technical University

M.S.E.E. 1969 Istanbul Technical University

Ph.D. 1975 Cornell University

Pearson, Robert E. (1997) Associate Professor

B.S.E.E. 1981 Rochester Institute of Technology

M.S.E.E. 1986 Rochester Institute of Technology

Ph.D. 1995 State University of New York, Buffalo

Price, Ronnie J. (1997) Affiliate Assistant Professor

B.S. 1984 Clinch Valley College

M.P.A. 1991 University of Virginia

Tucker, Jerry (1999) Associate Professor

B.S. 1963 Mississippi State University

M.E. 1969 University of Virginia

Ph.D. 1974 Virginia Polytechnic Institute

The profession of electrical engineering touches all aspects of our lives in that electrical engineers design and fabricate devices and systems critical in applications such as computing, communications, health care, manufacturing and automation, power generation and utilization, transportation and entertainment. An element very important to these and many other applications is the microelectronic device or system.

In the subarea of microelectronics, electrical engineers design and fabricate electronic materials such as semiconductors, conductors and superconductors used in the manufacture of electronic devices. As a natural progression, electrical engineers design and fabricate electronic devices such as transistors, which control or modulate the flow of energy; sensors of light, mechanical force, chemicals, etc.; electromagnetic radiation sources such as lasers, light emitting diodes and microwave power sources. Following this progression, we find electrical engineers designing and fabricating integrated circuits such as microprocessors and memory elements; flat panel displays, etc., which are found in applications ranging from supercomputers to watches, clocks and toys. Further in this progression we find electrical engineers designing and fabricating today's and tomorrow's computers.

Computer systems and Application Specific Integrated Circuits, ASICs, are the elements which enable the existence of today's communication systems such as the Internet, satellite systems, telemedicine, wired and wireless

(cellular) telephones, along with standard and high definition television. In addition, they, along with sensors, microwave power sources and actuators, permit our present and future automated manufacturing lines, air and traffic control systems, and automotive safety and traffic control through collision avoidance radar systems, antilocking brake systems (ABS), air bag actuators, automatic traffic routing and the “smart highway” of the future.

Electrical engineers play an ever increasing role in the design and building of major facets of today’s and tomorrow’s health care systems and medical research through the application of microelectronic instrumentation and diagnostic tools such as MRI and CATSCAN systems. The field of electrical engineering truly permeates every facet of our lives and thus provides excellent employment opportunities to the general practitioner or the specialist in over 35 different subspecialties.

The curriculum of the Electrical Engineering Program provides a strong foundation in the fundamentals of the profession including engineering problem solving, breadth in the major facets of the profession, and the opportunity to specialize in today’s critical areas of computer engineering, communication systems and microelectronics. Graduates of this program will be well prepared for constant technological change and growth through lifelong learning.

#### Freshman year in electrical engineering

	credits
<b>Fall semester</b>	
CHEM/ENGR 121 Materials Chemistry I	4
CHEM 101L General Chemistry Laboratory	1
MATH 200 Calculus I	4
ENGL 101 Composition and Rhetoric I	3
ENGR 101 Introduction to Engineering	4
	<hr/> 16
<b>Spring Semester</b>	
MATH 201 Calculus II	4
PHYS 207 University Physics I	5
ENGR 102 Engineering Concepts	4
General education elective	3
	<hr/> 16

#### Sophomore year in electrical engineering

<b>Fall semester</b>	
PHYS 208 University Physics II	5
MATH 301 Differential Equations	3

EGRE 206 Electric Circuits	3
CMSC 245 Structured Programming	3
Bioscience elective requirement	3
	<hr/> 17

#### Spring semester

EGRE 224 Introduction to Microelectronics	4
EGRE 254 Digital Logic Design	3
EGRE 303 Electronic Devices	3
ENGL 200 Composition and Rhetoric II	3
MATH 307 Multivariate Calculus	3
	<hr/> 16

#### Junior year in electrical engineering

##### Fall semester

EGRE 307 Integrated Circuits	4
EGRE 310 Microwave Photonics	3
EGRE 335 Signals and Systems	3
EGRE 364 Microcomputers	4
General education elective <sup>+</sup>	3
	<hr/> 17

##### Spring semester

EGRE 336 Introduction to Communication	3
STAT 541 Applied Statistics for Engineers and Scientists	3
Technical elective*	4
Technical elective*	3
General education elective <sup>+</sup>	3
	<hr/> 16

#### Summer between junior and senior years

The summer between the junior and senior years is devoted to either a full-time university, industrial manufacturing floor, or industrial research laboratory internship. This summer experience is intended to be intense and to have a major component of “hands-on” practice of engineering which will bring the life of “real-world” engineering practice to the classroom.

#### Senior year in electrical engineering

##### Fall semester

ENGR 402 Senior Seminar	1
ENGR 410 Review of Summer Internship	1
General education elective	3
SPCH 321 Speech for Business and the Professions or MGMT 325 Oral Communications	3
Technical elective*	4
Technical elective*	4
	<hr/> 16

##### Spring semester

ENGR 403 Senior Seminar	1
Technical elective*	3
Technical elective*	3
Technical elective*	3
General education elective	3

General education elective	3
	<hr/> 16

#### Total credits

**130**

\* Total technical elective credits is 24. Elective courses are selected from 300- or 400-level ENGR, EGRB, EGRC, EGRE or EGRM courses, with approval of the student’s adviser. Electrical engineering majors are required to select at least two courses (one with an associated laboratory) from one of the electrical engineering concentration areas, and at least one course from another electrical engineering concentration area. The electrical engineering technical elective courses in specific concentration areas are shown in the table below.

<sup>+</sup> Students must take either ECON 205 or ENGR 303 before their summer practicum.

#### Electrical engineering technical electives

<b>Controls</b>	credits
ENGR 454 Automatic Controls	4
EGRE 455 Control Systems Design	3
ENGR 427 Robotics	3

#### Communications

EGRE 336 Introduction to Communication Systems	3
EGRE 444 Communication Systems	3
EGRE 445 Digital Signal Processing	3

#### Microelectronics

ENGR 334 Introduction to Microelectronic Fabrication	4
EGRE 435 Semiconductor Processes	4
EGRE 436 Advanced Semiconductor Fabrication	4
EGRE 309 Electromagnetic Fields	3

#### Computer engineering

EGRE 426 Computer Organization and Design	3
EGRE 427 Advanced Digital Design	4
EGRE 429 VLSI Design	4

#### Special topics

EGRE 491 Special Topics	3
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#### Freshman year in computer engineering

##### Fall semester

ENGR 121 Materials Chemistry	4
CHEM 101L General Chemistry Laboratory	1
MATH 200 Calculus I	4
ENGR 101 Introduction to Engineering	4
ENGL 101 Composition and Rhetoric I	3

**16**

##### Spring Semester

PHYS 207 University Physics I	5
MATH 201 Calculus II	4
ENGR 102 Engineering Concepts	4

General education elective	3
	16

**Sophomore year in computer engineering****Fall semester**

PHYS 208 University Physics II	5
MATH 301 Differential Equations	3
EGRE 206 Electric Circuits	3
CMSC 245 Structured Programming	3
Bioscience elective	3

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**Spring semester**

MATH 307 Multivariate Calculus	3
EGRE 254 Digital Logic Design	3
EGRE 224 Introduction to Microelectronics	4
CMSC 246 Data Structures	3
ENGL 200 Composition and Rhetoric II	3

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**Junior year in computer engineering****Fall semester**

EGRE 307 Integrated Circuits	4
EGRE 364 Microcomputers	4
EGRE 335 Signals and Systems	3
MATH 211 Mathematical Structures	3
General education electives*	3

17

**Spring semester**

EGRE 336 Introduction to Communication Systems	3
STAT 541 Statistics	3
CMSC 312 Operating Systems	3
Technical elective*	3
General education elective*	3
General education elective*	3

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**Summer internship between junior and senior year****Senior year in computer engineering****Fall semester**

ENGR 402 Senior Design Studio I	1
ENGR 410 Review of Summer Internship	1
EGRE 426 Computer Organization and Design	3
CMSC 419 Software Development Methods	3
Technical elective*	4
General education elective	3

15

**Spring semester**

ENGR 403 Senior Design Studio II	1
EGRE 427 Advanced Digital Design	4

Technical elective*	4
General education elective	3
SPCH 321 Oral Communications or MGMT 325	3

15

**Total credits****130**

(Six general education electives are required.)

\* Total technical elective credits: 11. Selected from any 300 or 400 level CMSC, ENGR, EGRB, EGRC, EGRE or EGRM course with approval of adviser.

+ Students must take either ECON 205 or ENGR 302 before their summer practicum.

Students in the Electrical Engineering Program may elect one of the following programs/options. These options may, however, require more than 130 credit hours in order to fulfill the requirements for both the baccalaureate degree in electrical engineering and those of the program/option listed below.

**Premedicine/dentistry**

CHEM 102 General Chemistry	4
CHEM 102L General Chemistry Laboratory	1
CHEM 301-302 Organic Chemistry	3-3
CHEM 301L Organic Chemistry Laboratory	2
BIOL 151, 152 Introduction to Biological Sciences	3, 3
BIOL 151L, 152L Introduction to Biological Sciences Laboratory	1, 1
BIOL/PHIS 206 Human Physiology	3
BIOL 218 Cell Biology	3

**Business minor**

(see Part XI, "Minor in General Business," for additional requirements)

ECON 203 Introduction to Economics	3
ACCT 202 Accounting for Nonbusiness Majors	3
MRBL 308 Introduction to Marketing	3
FIRE 311 Financial Management	3
MGMT 319 Organizational Behavior	3
MRBL 323 Legal Environment in Business	3
INFO 360 Business Information Systems	3

**M.B.A. and engineering degree in five years****Undergraduate program**

ECON 210, 211 Principles of Economics	3, 3
ACCT 205 Introductory Accounting Survey	3
MRBL 308 Introduction to Marketing	3
FIRE 311 Financial Management	3
MGMT 319 Organizational Behavior	3
MRBL 323 Legal Environment in Business	3
INFO 360 Business Information Systems	3

**M.B.A. graduate program**

ECON 610 Managerial Economics	3
ACCT 608 Managerial Accounting Concepts	3
ECON 621 Topics in Economics	3
MGMT 641 Organizational Behavior	3
MGMT 642 Business Policy	3

MGMT 645 Operations Research	3
INFO 661 Management Information Systems	3
MRBL 671 Marketing Management	3
M.B.A. Electives	2

**Courses in electrical engineering (EGRE)****EGRE 206 Electric Circuits.**

Semester course; 3 lecture and 1 laboratory hour. 3 credits.

Prerequisites: ENGR 101. Corequisites: MATH 301 or consent of chair. An introduction to electrical circuit theory and its application to practical direct and alternating current circuits. Topics include: Kirchhoff's Laws (review from ENGR 101), fundamental principles of network theorems, transient and steady-state response of RC, RL, and RLC circuits by classical and Laplace transform methods, time-domain and frequency-domain relationships, phasor analysis and power. Laboratory work, practical applications and classroom demonstrations emphasize and illustrate the fundamentals presented in this course.

**EGRE 224 Introduction to Microelectronics.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits.

Prerequisites: EGRE 206, and MATH 301. Modeling, analysis, design, and measurement of electrical circuits which contain electronic devices. Topics include: electrical behavior of basic discrete devices including p-n junction diodes, bipolar junction and field-effect transistors along with integrated circuit concepts, and operational amplifiers. Treated will be concepts of input and output impedances, amplification, frequency response, and circuit topologies. Students will learn to design-to-specification through laboratory problems, a design project, and circuit simulation using SPICE computer software.

**EGRE 254 Digital Logic Design.**

Semester course; 3 lecture and 2 laboratory hours. 3 credits.

Prerequisites: EGRE 206 and MATH 201. Corequisites: EGRE 224. An introduction to digital logic design with an emphasis on practical design techniques and circuit implementations. Topics include number representation in digital computers, Boolean algebra, theory of logic functions, mapping techniques and function minimization, design of combinational, clock sequential, and interactive digital circuits such as comparators, counters, pattern detectors, adders and subtractors. Asynchronous sequential circuit concepts are introduced. Students will use the above basic skills in laboratory to design and fabricate a digital logic circuit.

**EGRE 303 Electronic Devices.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: MATH

301. Corequisite: EGRE 224. An introduction to solid state electronic devices which will take students from their understanding of basic quantum mechanical principles through the fundamentals of atomic structure, band theory, charge transport in solids, and terminal electrical characteristics of semiconductor devices including p-n junction and Schottky diodes, bipolar junction and insulated gate field-effect transistors.

**EGRE 307 Integrated Circuits.**

Semester course; 2 lecture hours and 3 laboratory hours. 4 credits. Prerequisites: EGRE 224 or consent of chair.

Modeling, analysis, design, and measurement of advanced

analog and digital integrated circuits. Operational amplifier circuit topology is used as a means of introducing and studying input, gain, level shift, and output stages. Analog differential amplifiers, feedback and high-frequency response will be emphasized. DC models of field effect transistors (MOSFETs) are utilized to study the operation of digital very large scale integrated (VLSI) circuits such as flip-flop, and memory circuit topologies. Circuit design and fabrication techniques are explored for mixed analog-digital circuits. This course provides the opportunity for layout and fabrication of an integrated circuit chip, using advanced simulation and layout software tools. Intensive computer-aided design and laboratory experience forms the core of this course, including a significant design project.

#### **EGRE 309 Electromagnetic Fields.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301 and MATH 307 or consent of chair. Fundamentals of engineering electromagnetics, including electrostatics, magnetostatics, electrodynamics, and conditions which permit the use of circuit theory. Analysis and understanding of the phenomena associated with electric and magnetic fields. Wave dynamical solutions of Maxwell's equations that will include: reflection and transmission in dielectric materials, waveguiding and transmission structures, and radiation from antennas. Computer simulation techniques such as finite-difference time-domain solutions of propagating waves will reinforce lecture material. Practical engineering applications will be investigated in a wave propagating laboratory exercise.

#### **EGRE 310 Microwave and Photonic Engineering.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 224. Wireless and optical communications applications of electromagnetic fields. Theory of microwave transmission line and waveguiding structures including impedance transformation and matching. Scattering parameters and techniques of low-noise microwave amplifier design, essential concepts from geometrical and physical optics and the interaction of photons with materials will be studied. Operating principles and design considerations of photoemitters (lasers and LEDs), photodetectors, and optical fiber are considered.

#### **EGRE 335 Signals and Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 206 and MATH 301. The concept of linear continuous-time and discrete-time systems, their classification, analysis, and design using mathematical models will be treated. Topics to be covered are: linear systems concept and classification, continuous-time linear systems differential equations, Laplace transforms and their application, z-transforms and their application, phasers, Fourier series, and Fourier transforms.

#### **EGRE 336 Introduction to Communication Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 335 and MATH 307. This course presents the mathematical principles upon which communication systems design is based. Examples of current communication systems are employed to aid students in understanding application of mathematical principles to real world systems. Topics include orthogonality and signal representation, Fourier transforms and applications, spectral density and correlation, amplitude modulation and applications, angle modulation,

pulse modulation, and brief introductions to probability and random variables and digital transmission are given.

#### **EGRE 364 Microcomputers.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 254 and CMSC 245. Basic computer organization, microprocessor instruction sets and architectures, assembly language programming, and the function of computer memory and I/O subsystems will be discussed. The laboratory is designed to reinforce the lectures by providing the opportunity to study the workings of a simple computer system in detail using simulation models and real hardware. Students will write and execute assembly language programs and make extensive use of commercial design automation tools.

#### **EGRE 426 Computer Organization and Design.**

Semester course; 3 lecture hours and 1 laboratory hour. 3 credits. Prerequisites: EGRE 364. This course presents the foundation for computer design at the register transfer level. Starting from an instruction set architecture, students will learn the process used to design a data path and control unit to implement that instruction set. In addition, the topics of computer components and structures, data paths and control unit organizations, I/O and memory systems, interrupt systems, pipelining and multiprocessing will be discussed. In addition to reinforcing the lecture material, the laboratory exercises will teach the students the art of modeling and designing computer system components using a hardware description language.

#### **EGRE 427 Advanced Digital Design.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisite: EGRE 426. This course provides students with practical foundations for the design, implementation and testing of digital systems. It expands on the digital and computer system theory presented in prerequisite courses. Topics covered include: microcontrollers and embedded processors, application specific IC (ASIC) architectures and implementing digital systems with ACISs, logic families and high-speed interfacing, logic synthesis, design methodologies, hardware/software codesign, production testing and design for testability, and construction, testing and debugging of digital system prototypes. In the laboratory, the students will design, construct, test and debug a multidisciplinary, computer-based hardware/software system for their senior design project.

#### **EGRE 429 VLSI Design.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 307 and EGRE 364. Analysis of NMOS and PMOS transistor design and their use in implementing digital logic. Implementation and layout of simple and complex digital logic cells using CMOS and other techniques. Fabrication design rules and design technology. VLSI chip layout and implementation. Students will design a complete VLSI chip using commercial design tools. The resulting designs will be submitted for fabrication using the MOSIS process.

#### **EGRE 435 Semiconductor Processes.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 303 and ENGR 334 or the consent of the instructor. This course presents a more detailed analysis of

the basic processes used in semiconductor processing. After developing the theoretical basis for understanding a process such as atomic level diffusion, modeling programs are used for verification and comparison. Ion implantation is studied in detail and a triple implanted isolated bipolar process is designed as part of the class work and fabricated in the laboratory portion of the course. The process is simulated and predicted electrical behavior is compared to actual laboratory results. Wafer parameter maps and probing are used to illustrate yield and uniformity issues.

#### **EGRE 436 Advanced Semiconductor Fabrication.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Prerequisites: EGRE 435 or consent of instructor. This course covers process integration into functional modules such as trench or LOCOS isolation, retrograde well formation, shallow junction formation, channel engineering, advanced gate structures and multilevel metal interconnects is covered. This course covers low-pressure chemical vapor deposition, silicide formation, plasma etching of thin films and chemical mechanical polishing. A polysilicon gate CMOS process is used as the basis for studying many of the topics covered in lecture. Electrical characterization of devices and circuits also is included in the lab work.

#### **EGRE 444 Communication Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 336. Design and analysis of analog and digital communication systems, pulse modulation, information and digital transmission, digital modulation, information theory, and coding will be treated. Emphasis is placed on the student gaining an appreciation for and an understanding of the role of optimization and trade-offs by considering bandwidth requirements, signal-to-noise ratio limitations, complexity and cost of analog and digital communication systems.

#### **EGRE 445 Digital Signal Processing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRE 336. Digital signal processing theory and algorithms including sampling theorems, transform analysis and filter design techniques. Discrete-time signals and systems, sampling of continuous time signals, the z transform, transform analysis of linear time-invariant systems, structures for discrete-time systems, and filter design techniques will be treated.

#### **EGRE 455 Control Systems Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGR 454. This course covers the use of state space methods to model analog and digital linear and nonlinear systems. Emphasis placed on the student gaining mathematical modeling experience, performing sensitivity and stability analysis and designing compensators to meet systems specifications. Topics treated will include a review of root locus and frequency design methods, linear algebraic equations, state variable equations, state space design, digital control systems (principles and case studies). The students will use complex dynamic systems for analysis and design.

#### **EGRE 491 Special Topics.**

Semester course; 3 lecture/laboratory hours. 3 credits. May be repeated up to a maximum of nine credits (in three separate topics) applicable toward the electrical engineering

major elective requirement. Advanced study of a selected topic in electrical engineering. See Schedule of Classes for specific topic to be offered and for prerequisites.

## Mechanical Engineering Program

### Eric Sandgren

Professor and Program Chair (1997)  
BSME 1973 Purdue University  
MSME 1974 Purdue University  
Ph.D. 1977 Purdue University

Cameron, Timothy M. (1999) Associate Professor

B.S. 1981 Cornell University  
M.Eng. 1985 Carnegie-Mellon University  
Ph.D. 1998 Carnegie-Mellon University

Cook, Dan (1999)

B.S. 1986 Ohio State University  
M.S. 1989 University of California, Berkeley  
Ph.D. 1993 University of California, Berkeley

Dorney, Daniel J. (1999) Associate Professor

B.S. 1985 University of Illinois  
M.S. 1987 University of Illinois  
Ph.D. 1992 Pennsylvania State University

Finto, Kevin J. (1997) Adjunct Assistant Professor

B.S.M.E. 1981 Northwestern University  
M.B.A. 1985 University of Texas  
J.D. 1985 University of Texas

Heinz, Robert A. (1997) Professor of Mechanical Engineering and Professor of Management

B.S. 1965 Lehigh University  
M.S. 1966 Lehigh University  
Ph.D. 1971 Carnegie Mellon University

Meyer, Donna M. (1999) Assistant Professor

B.S. 1993 University of Hartford  
M.S. 1995 Rensselaer Polytechnic Institute  
Ph.D. 1999 Rensselaer Polytechnic Institute

Palmer, Mark A. (1997) Assistant Professor

B.S. 1987 Rensselaer Polytechnic Institute  
Ph.D. 1995 Rensselaer Polytechnic Institute

Mechanical engineering is the most diverse of all the engineering fields. Mechanical engineers are the general practitioners of the engineering profession. They play a dominant role in a variety of industries, including transportation, power generation, consumer products and a variety of precision engineering enterprises such as optics, prosthetic devices and instruments. In addition to research, design and development work for specific products, mechanical engineers often are responsible for developing and operating the machines for producing, assembling, packaging and warehousing products. As a result, they often are involved with automated production facilities including machine tools and robots. Mechanical engineering, provides opportunities for employment in

industry, business, government, research and education.

The curriculum in mechanical engineering provides a broad, fundamental education preparing the student for direct entry into industry as well as further professional study. Additional courses in communications business teams and creativity are offered.

### Freshman year in mechanical engineering

#### Fall semester

CHEM/ENGR 121 Materials Chemistry I	4
CHEM L101 General Chemistry Laboratory	1
MATH 200 Calculus with Analytic Geometry	4
ENGL 101 Composition and Rhetoric	3
ENGR 101 Introduction to Engineering	4
	16

#### Spring semester

CHEM/ENGR 122 Materials Chemistry II	4
CHEM 102L General Chemistry Laboratory	1
MATH 201 Calculus with Analytic Geometry	4
PHYS 207 University Physics	5
ENGR 102 Engineering Concepts	4
	18

### Sophomore year in mechanical engineering

#### Fall semester

PHYS 208 University Physics	5
MATH 301 Differential Equations	3
EGRE 206 Electric Circuits	3
EGRM 201 Dynamics and Kinematics	3
General education requirement	3
	17

#### Spring semester

EGRM 202 Mechanics of Deformables	3
ENGL 200 Composition and Rhetoric	3
MATH 307 Multivariate Calculus	3
EGRE 206 Electrical Circuits	3
General education requirements	3
	15

### Junior year in mechanical engineering

#### Fall semester

ENGR 301 Transport Phenomena I (fluid mechanics)	3
ENGR 304 Thermodynamics	3
ENGR 305 Sensors/Measurements	3
EGRM 300 Mechanical Systems Design	3
EGRM 420 CAE Design	3
General education requirement	3
	18

### Spring semester

ENGR 302 Transport Phenomena II (heat and mass transfer)	3
EGRM 308 Automatic Controls	3
EGRM 303 Thermal Systems Design	3
EGRM 421 CAE Analysis	3
General education requirement	3
	15

### Summer

The summer between the junior and senior years is devoted to either a full-time university, industrial manufacturing floor, or industrial research laboratory internship. This summer experience is intended to be intense and to have a major component of "hands-on" practice of engineering which will bring the life of "real-world" engineering practice to the classroom.

### Senior year in mechanical engineering

#### Fall semester

ENGR 402 Senior Seminar	1
ENGR 402L Senior Design – Laboratory	2
ENGR 410 Review of Summer Internship	1
EGRM 410 Mechanical Engineering Laboratory	3
STAT 541 Applied Statistics	3
General education requirement	3
Technical electives	6
	18

#### Spring semester

ENGR 403 Senior Seminar	1
ENGR 403L Senior Design – Laboratory	2
General education requirement	3
Technical electives	6
	12

### Minimum total requirement

130

Mechanical engineering students must select a total of four technical electives from the three lists of courses below. Other technical electives may be taken with the approval of the program chair. Students must take BIOL/PHIS 206 before taking a course in biomedical engineering.

### Technical electives

#### Mechanical design

EGRM 435 Design for Manufacturing and Assembly	3
EGRM 436 Engineering Materials	3
EGRM 437 Principles of Polymer Engineering	3
EGRM 438 Tribology	3

#### Manufacturing

EGRM 425 Introduction to Manufacturing Systems	3
EGRM 426 Manufacturing Processes	3

EGRM 427 Robotics	3
EGRM 428 Polymer Processing	3

**Biomedical engineering**

BIOL/PHIS 206 Human Physiology	3
EGRB 310 Biomechanics	3
EGRB 307 Biinstrumentation	3
EGRB 406 Artificial Organs	3
EGRB 427 Biomaterials	3

In lieu of the above technical electives, mechanical engineering majors may select a minor in business, physics, mathematical sciences, physiology, electrical engineering, chemical engineering or one of the following programs/options. However, this may require more than 130 credits in order to fulfill both the requirements for the baccalaureate degree in mechanical engineering and those of the minor or program/option selected below:

**Premedicine/dentistry option**

CHEM 301-302 Organic Chemistry	3-3
BIOL 151, 152 Introduction to Biological Sciences	3, 3
BIOL 151L, 152L Introduction to Biological Sciences Laboratory	1, 1
BIOL 218 Cell Biology	3

One additional upper level course is to be selected with the approval of an adviser.

**Mechanical engineering B.S. degree and M.B.A. in five years****Undergraduate program**

ECON 210, 211 Principles of Economics	3, 3
ACCT 205 Introductory Accounting Survey	3
MRBL 308 Introduction to Marketing	3
FIRE 311 Financial Management	3
MGMT 319 Organizational Behavior	3
MRBL 323 Legal Environment of Business	3
INFO 360 Business Information Systems	3

**M.B.A. graduate program**

ECON 610 Managerial Economics	3
ACCT 608 Managerial Accounting Concepts	3
ECON 621 Topics in Economics	3
MGMT 641 Organizational Behavior	3
MGMT 642 Business Policy	3
MGMT 645 Operations Research	3
INFO 661 Management Information Systems	3
MRBL 671 Marketing Management	3
M.B.A. electives (2)	6

**Courses in mechanical engineering (EGRM)****EGRM 201 Dynamics and Kinematics.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: PHYS 207 and ENGR 102. Corequisite: MATH 201. Kinematics and kinetics of particles. Kinematics of rigid bodies; translation and fixed-axis rotation relative to translating

axes, general planar motion, fixed-point rotation, general motion. Kinetics of rigid bodies: center of mass, mass movement of inertia, product of inertia, principal-axes, parallel-axes theorems. Planar motion, work-energy method.

**EGRM 202 Mechanics of Deformables.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGR 102, MATH 200-201. An introductory course covering the mechanics of deformable solids. Subjects include stress, strain and constitutive relations; bending of beams; torsion; shearing; deflection of beams; column buckling; fatigue; failure theory; analysis and design of bar-type members.

**EGRM 300 Mechanical Systems Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: EGRM 201, EGRM 202, MATH 301, or permission of the instructor. Basic principles of applied mechanics and materials employed for the design of machine elements and mechanical systems; state of stress, deformation, and failure criterion is applied to bearings, brakes, clutches, belt drives, gears, chains, springs, gear trains, power screws and transmissions.

**EGRM 303 Thermal Systems Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: MATH 301, ENGR 301, and ENGR 304 or permission of the instructor. Fundamentals of heat transfer, thermodynamics, and fluid mechanics applied to the analysis, design, selection and application of energy conversion systems.

**EGRM 308 Automatic Controls.**

Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisites: PHYS 207, MATH 301, ENGR 102, or permission of the instructor. Mathematical modeling of automatic control systems; transfer functions, stability theory; open-loop and closed-loop control; Bode plots; application to control system design.

**EGRM 410 Mechanical Engineering Laboratory.**

Semester course; 2 lecture hours and 3 laboratory hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Operation and control of process equipment and mechanical machinery for the determination of operating characteristics; design of experiments, analysis of results, written and oral presentation of reports.

**EGRM 420 CAE Design.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Fundamentals of geometric modeling and graphics theory; basic structure of commercial CAD/CAM systems; design and manufacturing applications.

**EGRM 421 CAE Analysis.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Application of computer-based techniques to the analysis of mechanical devices and systems; computer graphics; finite element analysis; application to design.

**EGRM 425 Introduction to Manufacturing Systems.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Basic principles of systems analysis and

modeling applied to manufacturing processes and operations. Topics include material management, quality control, group technology, process planning and control, modeling and simulation of factory operations. State-of-the-art concepts such as agile and flexible manufacturing are covered.

**EGRM 426 Manufacturing Processes.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Introduction to the operation and design of metal fabrication processes; analysis of metal casting, extrusion, rolling, forging, wire and rod drawing; metal removal and joining methods; electronic compound fabrication and assembly are covered. Business case studies are included.

**EGRM 428 Polymer Processing.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: ENGR 301, ENGR 302, or permission of the instructor. Basic principles of momentum and heat transfer applied to the analysis of polymer processing operations; introduction to polymer rheology; operation and design aspects of extruders, blown film, injection molding, thermoforming, and compression molding machinery.

**EGRM 435 Design for Manufacturing and Assembly.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Methodologies used in the synthesis and analysis of product design in order to optimize manufacturing and assembly; relationship of design to the production processes, materials handling, assembly, finishing, quality and costs with emphasis on both formed and assembled products.

**EGRM 436 Engineering Materials.**

Semester course; 3 lecture hours. 3 credits. Prerequisites: Senior standing in the School of Engineering or permission of the instructor. Materials properties and their modification as related to engineering properties and design; elastic and plastic stress-strain behavior of materials along with diffusion in solids, phase equilibria, and phase transformations; materials selection considerations include design, fabrication, mechanical failure, corrosion, service stability as well as compatibility and function in the human body.

**EGRM 437 Principles of Polymer Engineering.**

Semester course; 3 lecture and 1 laboratory hour. 3 credits. Prerequisite: EGRM 202 or permission of the instructor. Basic principles of mechanics applied to the mechanical design and fabrication of polymers; introduction to polymer structure, rubber elasticity, and viscoelasticity; mechanical properties, plastic part design and plastic materials selection; fabrication processes.

**EGRM 438 Tribology.**

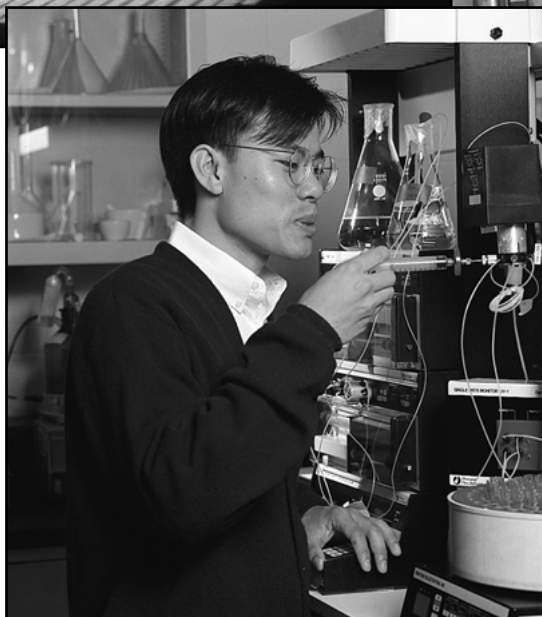
Semester course; 3 lecture hours. 3 credits. Prerequisite: ENGR 301. Basic principles of tribology applied to the friction, wear and design of mechanical systems; fundamentals of surface contact; friction theories and wear mechanisms; temperature considerations in sliding contacts; hydro-dynamic, hydrostatic, elastohydrodynamic, and boundary lubrication; materials selection and design.



# School of Graduate Studies

Degree-seeking graduate students ..... 308

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**The School of Graduate Studies awards over 1,200 master's degrees and 100 doctoral degrees each year from programs ranging from advertising to molecular biology to urban services.**

**Academic Campus****901 W. Franklin St.****P.O. Box 843051****Richmond, VA 23284-3051****(804) 828-6916 • Fax (804) 828-6949****Jack L. Haar**

Dean of Graduate Studies and

Professor of Anatomy, School of Medicine

B.S. 1964 Capital University

M.S. 1966 University of Arizona

Ph.D. 1970 Ohio State University

**Sherry T. Sandkam**

Associate Dean, School of Graduate Studies

and Assistant Professor, Division of

Educational Studies, School of Education

B.A. 1970 Longwood College

M.B.A. 1986 Virginia Commonwealth University

Ph.D. 1996 Virginia Commonwealth University

Before enrolling in graduate courses, students should consult with the graduate director of the program of interest.

In some programs, credits for courses will not apply to a VCU graduate degree until the student has been admitted to a graduate degree program.

### **Degree-seeking graduate students**

For information about graduate study at VCU, see the Graduate Bulletin or contact the School of Graduate Studies at 901 W. Franklin St., Room B1, P.O. Box 843051, Richmond, VA 23284-3051, (804) 828-6916. The Graduate Bulletin is available for purchase at the VCU Bookstores, or may be accessed, in its entirety, via the Internet.

— — — [www.vcu.edu/gradweb/](http://www.vcu.edu/gradweb/)

### **Nondegree-seeking graduate students**

A student who takes graduate courses without formal admission into a degree program is classified as a non-degree-seeking graduate student. Such

students are required to verify residency and eligibility and obtain written permission from the school or schools in which they intend to take courses. A non-degree-seeking graduate student must hold a baccalaureate degree.

Enrollment in some graduate courses is limited to degree-seeking students or majors. In courses where enrollment is restricted, first priority is given to students admitted to the program, and then to other VCU graduate degree-seeking students. Nondegree-seeking students are not exempt from taking prerequisites for a course. There is no limit to the number of credits a nondegree-seeking student may take, as long as the student's academic performance is credible. However, a nondegree-seeking student who is later admitted as a degree-seeking student may apply only six credit hours earned as a nondegree-seeking student toward the degree. For information about admission as a non-degree-seeking student, contact the Graduate School at (804) 828-6916.

# School of Medicine

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**Through innovative research and scholarly activity, the School of Medicine creates an atmosphere for its students to learn the latest medical knowledge, develop better systems of medical education, develop more effective health care methods and be better prepared to tackle the latest medical issues.**



## Professional Program

Medicine M.D.

**1101 E. Marshall St. • P.O. Box 980565**  
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#### **Heber H. Newsome**

Professor of Surgery and  
 Dean, School of Medicine (1970)  
 B.S. 1958 Wake Forest University  
 M.S. 1962 and M.D. 1962 Tulane University

#### **Jan F. Chlebowski**

Professor of Biochemistry and Molecular Biophysics  
 and Associate Dean for Graduate Education (1979)  
 B.A. 1965 St. Mary's College  
 Ph.D. 1969 Case Western Reserve University

#### **Ralph R. Clark III**

Assistant Professor of Internal Medicine and  
 Associate Dean for Clinical Activities (1990)  
 B.S. 1983 College of William and Mary  
 M.D. 1987 Medical College of Virginia  
 of Virginia Commonwealth University

#### **William M. Gleason**

Assistant Professor and Associate Dean  
 for Administration (1980)  
 A.B. 1969 University of North Carolina, Chapel Hill  
 M.B.A. 1973 Indiana University  
 Goodwin, Margarette C. (1975) Assistant Professor  
 B.S. 1980 Virginia Commonwealth University

#### **Carol L. Hampton**

Associate Professor and Associate Dean  
 for Faculty and Instructional Development (1987)  
 B.A. 1965 University of Arkansas  
 M.M.S. 1969 Tulane University  
 Seago, Brenda L. (1989) Assistant Professor  
 B.A. 1975 Augustana College  
 M.A. 1983 Virginia Polytechnic Institute  
 and State University  
 M.L.S. 1986 University of Maryland

Schlesinger, Jeanne B. (1992) Assistant Professor  
 B.S. 1971 Tulsa University  
 M.Ed. 1995 Virginia Commonwealth University

#### **Cynthia M. Heldberg**

Associate Professor and  
 Associate Dean for Admissions (1986)  
 B.A. 1965 Brown University  
 M.A. 1983 West Virginia College  
 Ph.D. 1997 Virginia Commonwealth University  
 Edwards, Aileen A. (1992) Instructor  
 B.G.S. 1991 Virginia Commonwealth University  
 M.S. 1997 Central Michigan University

The School of Medicine of the then Medical College of Virginia opened on Nov. 5, 1838, as the medical department of Hampden-Sydney College.

Full-time clinical faculty members were first appointed in 1928, and improved facilities became available between 1936 and 1941 with the completion of the 600-bed West Hospital, A. D. Williams Clinic and Hunton Hall dormitory, located on the current site of the Main Hospital building. Growth in faculty, students and facilities continued after World War II, leading to the development of today's academic health center.

Hospital facilities on the MCV Campus include both inpatient and outpatient facilities. MCV Hospitals of Virginia Commonwealth University is licensed for 902 beds. In addition, the hospital at the McGuire Veterans Affairs Medical Center (600 beds) provides excellent patient care, training and research opportunities for the School of Medicine through its affiliation programs.

Basic health sciences historically have been an integral part of the curriculum of medicine, dentistry, pharmacy, nursing and allied health disciplines. In the earlier years of the university, the basic sciences departments were administered by the School of Medicine. Between 1966 and 1994, a separately established School of Basic Health Sciences administered the basic sciences departments, instruction in basic sciences for students in other health sciences programs and selected graduate degree programs. By action of the university's Board of Visitors, the School of Basic Health Sciences was merged with the School of Medicine effective July 1, 1994.

### **General information**

The mission of the School of Medicine is constant improvement of the quality of health care for citizens of Virginia, using innovative, scholarly activity to create new knowledge, to provide better systems of medical education, and to develop more effective health care methods.

The School of Medicine shares the general objectives of VCU.

1. To maintain an environment of educational excellence that will attract students and faculty interested in an institution maintaining the highest academic standards.
2. To promote an educational atmosphere that will develop in students: (a) desire and interest in

lifelong learning, (b) intellectual curiosity, and (c) excellence in skills and knowledge required for the solution of problems of health and disease.

3. To provide standards of clinical practice and scientific investigation that will serve students as examples throughout their professional careers.

The primary aim of the School of Medicine is to provide an academic environment appropriate for the education of its students, including undergraduate medical students and graduate physician house officers and continuing education directed towards the needs of practicing physicians. In the classroom, laboratory, clinic and hospital, the faculty and students are brought together in teaching-learning experiences promoting scientific scholarship and personal growth in knowledge and professional skills.

The School of Medicine and its faculty have vested responsibilities for the advancement of knowledge through research and for service to the community through application of skills in health-care leadership and patient care. Therefore, we share with teaching the interdependent and almost inseparable objectives of research and service.

### **Faculty and facilities**

The School of Medicine consists of 700 full-time faculty, including affiliates, assisted by 630 residents and fellows and over 700 clinical voluntary faculty. Programs of instruction and research are conducted on campus, at the McGuire Veterans Affairs Medical Center and at affiliated hospitals in an effort to expose the students to the variety of clinical disorders encountered in the eastern United States. Those affiliated community hospitals beyond Richmond include Northampton-Accomack Hospital in Nassawadox, Johnston Memorial Hospital in Abingdon, Riverside Hospital in Newport News, Rappahannock General Hospital in Kilmarnock, and Radford Community Hospital in Radford.

### **Doctor of Medicine Program (M.D.)**

#### **Admissions**

The School of Medicine participates in the American Medical College

Application Service. The AMCAS application forms can be obtained from AMCAS, 2450 N. St., N.W., Washington, D.C. 20037-1126. The application request forms are available from pre-medical advisers in all colleges and universities or from the Office of Admissions of the School of Medicine located on the MCV Campus.

Application for the School of Medicine should be made on or after June 1 of the year preceding intended matriculation. The closing date for filing applications for this institution is Nov. 15 of the year preceding the enrollment date. Priority for admissions is given to Virginia residents. Members of minority groups under-represented in medicine are especially encouraged to apply to the School of Medicine. Students previously dismissed from a medical school will not be considered. All applicants must be U.S. citizens or permanent residents of the United States at the time of application.

A nonrefundable \$75 application fee and supplemental information, including faculty recommendations, will be required with all applications accepted for further consideration. The final date for returning supplemental information is Dec. 1 of the year preceding possible enrollment in the School of Medicine.

The School of Medicine will not admit students from other health sciences schools at VCU until such students have completed the degree program for which they are enrolled.

The School of Medicine participates in the Early Decision Plan. This program permits an applicant to file a single application through AMCAS on or after June 1 but prior to Aug. 1. All applicants filing under the Early Decision Plan will receive consideration for admission and a response on or before Oct. 1. All applications for the Early Decision Plan must be supported by the results of the new MCAT test at the time the application is made.

The early notification date of this plan ensures that those who are unsuccessful have ample time to request further distribution of their applications to other medical schools. Further information on the Early Decision Plan is available with the AMCAS application.

### Requirements for entrance

The MCAT is required as part of the application. It is necessary that the test

be taken no later than the fall of the year of application since selections will be complete before the spring test is given in the year of admission. This test is produced by the American College Testing Program, P.O. Box 414, Iowa City, IA 52240, and is administered in colleges and universities throughout the country. Information about the MCAT is available through premedical advisers or directly from the American College Testing Program.

Applicants may be admitted on the basis of 90 semester-hours of outstanding achievement; however, the majority of students admitted are completing their baccalaureate programs. The college major for premedical students should be selected in accordance with the individual student's aptitude and interest. The prerequisites for the School of Medicine have been reduced to a minimum in order to permit the widest possible latitude in preparation for medical education.

Prerequisites for admission include a minimum of 90 semester hours (or the equivalent) in a college or university accredited by the regional accrediting agency. This program of study must include a minimum of:

1. English — two semesters (one semester to include grammar and composition),
2. college mathematics — two semesters,
3. biological science (eight semester hours) including laboratory experience. This requirement may be satisfied by general biology, general zoology or botany. No more than half may be botany,
4. general or introductory chemistry (eight semester hours) including laboratory. An appropriate portion of this requirement may be met by courses in analytical chemistry or physical chemistry,
5. organic chemistry (six semester hours) including laboratory. This course should be equivalent to and acceptable for continued studies in a chemistry major, and
6. general or introductory physics including laboratory experience (eight semester hours).

Students are encouraged to pursue their own intellectual interests in college in order to obtain a broad education consistent with their major program. Courses in medically related science areas will not relieve the student

### Paul E. Mazmanian

Professor of Preventive Medicine and Community Health and Associate Dean for Continuing Medical Education (1978)  
B.S. 1972 Wayne State University  
M.A. 1975 Michigan State University  
Ph.D. 1979 University of Michigan

Boothby, John R. (1983) Assistant Professor  
M.S.W. 1977 Virginia Commonwealth University

### James M. Messmer

Associate Professor of Radiology and Associate Dean for Medical Education (1981)  
B.A. 1968 Rockhurst College  
M.D. 1972 St. Louis University  
M.A. 1995 Virginia Commonwealth University

Hoban, John D. (1999) Associate Professor, Education Research Specialist  
B.A. 1964 Villanova University  
M.S. 1971 and Ed.D. 1973 Indiana University

Kreutzer, Kathleen O'Kane (1984) Assistant Professor  
B.A. 1981 College of William and Mary  
M.Ed. 1991 Virginia Commonwealth University

### Mary D. Nettleman

Associate Professor of Internal Medicine and Associate Dean for Primary Care (1996)  
B.S. 1977 Ohio University  
M.D. 1981 Vanderbilt University  
M.S. 1993 University of Iowa

### Robert P. Perry

Associate Professor of Internal Medicine and Associate Dean for Graduate Medical Education (1979)  
A.B. 1972 Harvard University  
M.D. 1976 University of Rochester

### Karen Sanders

Associate Dean for McGuire Veterans Administration Medical Center Affairs

### Hugo R. Seibel

Professor of Anatomy and Associate Dean for Student Activities (1967)  
B.S. 1960 Brooklyn College  
Ph.D. 1967 University of Rochester

Bates, Sean L. (1997) Director for Financial Aid, School of Medicine  
B.S. 1992 James Madison University  
M.S. 1995 and M.P.H. 1997 Virginia Commonwealth University

### Donald M. Switz

Professor of Internal Medicine and Associate Dean for Ambulatory Care Activities for MCV Hospitals of Virginia Commonwealth University (1970)  
B.A. 1958 Carleton College  
M.D. 1962 University of Chicago

of his/her responsibility for these subjects in the medical curriculum.

### Selection factors

Demonstrated academic ability, as well as attributes of character and personality, are of significance to the admissions committee in the selection process. A review of academic achievement as represented by the standard academic record and summaries, MCAT scores, evaluations and interviews are all sources of information on which the comparative evaluation process is based. A review of the completed application file and interviews with members of the admissions committee are an integral part of the admissions process.

Noncognitive variables also are sought in all candidates. These qualities include, but are not limited to, health care experience, community service and social concern, communication skills both written and oral, leadership, ethical and moral behavior, creativity, compassion and empathy, altruism, personal maturity, self-confidence without arrogance, appropriate motivation, the ability to realistically self-appraise, and a demonstrated ability to work as a team member. These qualities and characteristics are judged by references within the letters of recommendation and from a careful review of the student's essays and extracurricular activities, as well as the interviewers assessment during the interview.

The School of Medicine hopes to create a learning environment where students will meet colleagues whose life experiences and views differ significantly from their own. A physician must be at home and at ease in a wide variety of environments and with a wide variety of people. Students frequently comment that the aspect of the school they appreciate most is the diversity of their class. The admissions process seeks to foster that diversity of perspective and background by admitting students from a wide range of backgrounds socioeconomically, culturally, geographically and educationally.

The interview is an opportunity for the applicant to become acquainted with the institution and it offers additional information for the selection process. Only on-campus interviews in Richmond are available. Each year more applicants are interviewed than

can be accepted in the class. Therefore, an interview is not an indication of acceptance to the School of Medicine.

Offers for admission are made as previously indicated in the Early Decision Plan and on the uniform acceptance date of Oct. 15, with admissions occurring at several points thereafter until the class selections have been completed. At the time the class is filled, an alternate list of applicants is compiled from which replacements are drawn for any vacancies which may occur in the selected class between notification and the third week of class attendance. Since selections are made in advance of actual attendance, all acceptances are made on condition of satisfactory completion of courses planned or in progress. It is expected that candidates will maintain acceptable standards of deportment. Students offered acceptance into a class are expected to respond within two weeks of the offer. If such a response presents a problem, extension of the time for the response should be requested.

The enrollment of accepted candidates is considered complete only after payment of the \$100 deposit towards the first tuition payment. This deposit will be returned to the candidate should withdrawal occur prior to May 15 of the year of attendance. By the act of matriculating in the School of Medicine, the student accepts the responsibilities related to this opportunity and agrees that during the time that he/she is a registered student he/she will follow the rules and regulations established by the governing bodies of the School of Medicine and the university.

### Transfer in advanced standing

Advanced standing admission is open only to students who have not previously been dismissed from any medical school and who are in good standing in LCME-accredited American or Canadian medical schools. Transfers are only at the third-year level and are limited in number each year. Interested students should request information between Jan. 1 and Jan. 15 of the year they wish to transfer. Such individuals must pass Step I of the U.S. medical licensing examination prior to matriculation.

Application materials and further information may be obtained by writing to Admissions, School of Medicine, Virginia Commonwealth University,

P.O. Box 980565, Richmond, VA 23298-0565.

U.S. citizens in foreign medical schools recognized by the World Health Organization may apply for admission only to the first-year class through AMCAS.

### Curriculum

The program for the M.D. degree is divided into four phases, each of a year's duration. Medicine I, occupying the first year (mid-August to early June), emphasizes normal human structure, function, growth and development. Medicine II, occupying the second year (August to June), stresses the abnormal. Medicine III occupies the third year (July to July) and consists of clinical education and training. Medicine IV, lasting from August to mid-May, consists of approximately one-third required clinical education and training and approximately two-thirds electives at the Medical College of Virginia of VCU and at approved medical schools elsewhere in the United States and abroad. Elective opportunities also are offered in M-I and M-II.

Since 1995, School of Medicine students begin their clinical exposure in the first month of medical school in the Foundations of Clinical Medicine course. This longitudinal experience runs throughout the first two years and consists of one afternoon session per week in a private primary-care physician's office alternating with one afternoon per week in a small group session. This new aspect of the curriculum gives the student the opportunity to learn the clinical relevance of basic science material and provides a fundamental understanding of the skills necessary for all clinical disciplines and to work with a primary-care role model.

**Registration in courses offered by the School of Medicine is restricted to students enrolled in the School of Medicine at the Medical College of Virginia of VCU.**

### Medicine I, II and III

The curriculum is viewed as a dynamic and evolving entity, and course titles, content or duration of emphasis may be subject to modification for the sake of improving the learning experience.

Each course in M-I and M-II is designed and implemented by the faculty, and each year of the curriculum is supervised by a faculty coordinator. In M-III, a committee under a coordinator supervises the clinical experiences, and in M-IV there is an electives committee whose chair is the M-IV coordinator.

## Medicine I

### Course

Medical biochemistry  
Histology  
Gross anatomy  
Physiology  
Human genetics  
Pathogenesis  
Behavioral sciences  
Population medicine  
Neurosciences  
Foundations of clinical medicine  
Immunology  
Medical ethics

## Medicine II

### Course

Pathogenesis  
Microbiology  
Preventive medicine  
Pharmacology  
Hematology-oncology  
Gastrointestinal  
Central nervous system  
Behavioral sciences  
Respiratory  
Cardiovascular  
Renal  
Musculoskeletal-dermatology  
Endocrine  
Women's health  
Foundations of clinical medicine

## Medicine III

### Rotation

Internal medicine  
Surgery  
Pediatrics  
Obstetrics-gynecology  
Psychiatry  
Neurology  
Family practice  
M-III combined workshop

## Medicine IV

The School of Medicine, in an effort to best serve the needs and goals of the individual student, offers M-IV students the option of choosing electives during two-thirds of their senior year. The elective curriculum has been arranged

primarily to allow those students who have definite goals to pursue them logically without adherence to a required curriculum. At the same time, it allows those who have not yet defined their goals an adequate assortment of electives with which to explore career options. Where standard elective choices seem too limiting, students are encouraged to approach individual faculty members relative to the development of unique courses that more closely approach individual needs. A member of the M-IV Committee is available to advise each student and to approve each student's program.

The year is divided into nine four-week periods. The required rotations which must be served at the MCV Campus are an acting internship and completion of the Update of Basic Sciences and Clinical Medicine course. The first month of M-IV is divided into a two-week vacation and a two-week required Step II board review course.

A new electives catalog is published each year.

**All students are required to take the U.S. Medical Licensing Examination Step I at the end of M-II and Step II in the fall of M-IV.**

## Graduate medical education

Clinical training leading to qualification for certification by the American specialty boards is offered in the following programs: general surgery, vascular surgery, thoracic surgery, urology, allergy and immunology, anesthesiology, clinical genetics, dermatology, dermatopathology, family practice, internal medicine, neurosurgery, neurology, child neurology, obstetrics/gynecology, ophthalmology, orthopedic surgery, otolaryngology, pathology, forensic pathology, neuropathology, pediatrics, pediatric cardiology, pediatric allergy and immunology, pediatric hematology and oncology, nuclear medicine, neonatal-perinatal medicine, physical medicine and rehabilitation, plastic surgery, psychiatry, diagnostic radiology, diagnostic radiology (nuclear), therapeutic radiology, oral surgery, public health and preventive medicine.

Programs sponsoring a PGY-1 year (internship) are internal medicine, surgery, family practice, obstetrics/gynecology, pathology, pediatrics, anesthesiology, psychiatry, diagnostic radiology and neurology.

Requests for further information should be directed to the program of interest or the Associate Dean for Graduate Medical Education, School of Medicine, Virginia Commonwealth University, P.O. Box 980257, Richmond, VA 23298-0257.

## Continuing education

### Mission statement

The primary goal of the Office of Medical Education at the Medical College of Virginia of VCU is to provide continuing educational experiences specifically designed to enhance the delivery of high quality patient care by physicians and other health-care professionals in Virginia and other states. The philosophy of continuing medical education is based on the belief that learning must be viewed as a lifelong process. In past generations, the graduating physician was able to look upon an acquired knowledge base as a reasonably stable resource for practicing medicine. However, today's rapidly expanding load of scientific information forces a continuing learning effort upon the physician. Undergraduate and graduate medical education alone can no longer offer reasonable assurance that practitioners are armed with the knowledge, attitudes and skills that will enable them to render optimal, achievable patient care throughout their careers. Continuing education is now linked with undergraduate and graduate education to complete the continuum of medical education.

The goal and philosophy stated herein undergird and lend direction to the effort of the Office of Medical Education as it engages in a diversity of educational and education-related activities. Specifically, the Office of Medical Education works in concert with the faculty of the School of Medicine as well as other individuals and organizations as appropriate, to:

1. coordinate a state-wide continuing medical education program for several networks of affiliate hospitals,
2. organize the Virginia Hospital Television Network and provide continuing education programs for physicians and other health professionals directly into hospitals statewide, using satellite and audio-conferencing,

3. develop and deliver a series of short courses, clinical workshops, seminars, international medical study tours and conferences for physicians and other health professionals,
4. provide clinical refresher courses and make readily available self-learning materials and methods,
5. conduct research to improve the process of continuing medical education, and
6. improve the education of the general public in the proper use of health care resources.

Fostering an appreciation for the concept of lifelong learning in undergraduate and graduate medical school programs is a challenge that is now being confronted by medical schools throughout the nation. During these critical years, the attitudes of medical students toward continuing pursuits of learning are molded and developed. In order to encourage undergraduate and graduate students at VCU to embrace the concept of lifelong learning, the Office of Medical Education actively seeks their involvement in its various programs and activities. Brochures, posters and a yearly catalogue are utilized to announce pending events.

Further information may be obtained by writing the Assistant Dean for Continuing Education, School of Medicine, Virginia Commonwealth University, P.O. Box 980048, Richmond, VA 23298-0048.

### **Office of Medical Alumni Relations**

The Office of Medical Alumni Relations was established to develop and enhance the School of Medicine's interaction with its alumni. A School of Medicine newsletter, first published in 1987, provides a direct communication link between the school, its departments and its alumni. All alumni are encouraged to keep the office informed of personal news for publication. The office and its staff are available to alumni for information, advocacy and assistance in their contacts with the school and its departments. Staff also will coordinate the new Bed and Breakfast Program for students on residency interviews. Additional student/alumni opportunities will be developed.

The office welcomes ideas and suggestions from all alumni and students

at any time. For further information, contact Director, Office of Medical Alumni Relations, School of Medicine, Virginia Commonwealth University, P.O. Box 980290, Richmond, VA 23298-0290; telephone (804) 225-3578.

### **Office of Development**

The Office of Development was established to secure private philanthropic support for the School of Medicine. This office is responsible for the identification, cultivation and solicitation of major gifts to the school from individuals, corporations and foundations. The office works closely with the school's Office of Medical Alumni Relations, the MCV Hospitals' Office of Development of VCU, the Medical College of Virginia of VCU Foundation and the University Advancement Office.

Gifts to the university may be restricted to the School of Medicine by making a gift to the Medical College of Virginia of VCU Foundation and designating it for any of the variety of purposes that fall within the scope of the school's activities. Gifts may be made out-right, pledged over a period of years, or made through any one of several planned gift mechanisms which allow for the return of income to the donor after the gift is made.

The Office of Development also helps coordinate several donor recognition events and assists in maintaining contact with past donors to the School of Medicine.

Further information may be obtained by writing to Director, Office of Development, School of Medicine, Virginia Commonwealth University, P.O. Box 980022, Richmond, VA 23298-0022, or by calling (804) 371-7451.

### **Annual lectureships**

The Department of Pediatrics annually sponsors a medical education program and the Sutton Lecture in honor of the late Dr. Lee E. Sutton Jr., who was chair of the department from 1938 to 1958 and dean of the medical school from 1929 to 1942.

The annual Kinloch Nelson Medical Students Honors Day, sponsored by the American Medical Student Association and Alpha Omega Alpha, was designated as an expression of appreciation for the leadership Dr. Nelson provided during his tenure as dean of the School of Medicine from 1963 to 1971.

The Sanger Lecture was established and endowed by the late Dr. Harvey B. Haag, professor and chair of the Department of Pharmacology and dean of the School of Medicine from 1947 to 1951, as a tribute to Dr. William T. Sanger for his dedication and service to the institution. Dr. Sanger served as president of MCV from 1925 until 1956, chancellor from 1956 to 1959, and chancellor emeritus from 1959 until his death in 1975. The lectureship annually offers topics of current interest in the area of science and ethics to the university and the Richmond community.

The annual Charles W. Thomas Lectureship began in 1971 honoring Dr. Thomas, whose bequest of one million dollars led to the establishment of the Charles W. Thomas Arthritis Research Unit for research and education in the area of arthritis, a disease from which he suffered. A graduate of the Medical College of Virginia, class of 1903, Dr. Thomas was a native of Patrick County, Va., and practiced medicine in the state for over 50 years.

In 1973, former residents in obstetrics and gynecology from the Medical College of Virginia of VCU, through their organization, the H. Hudnall Ware Jr. Society, established the H. Hudnall Ware Jr. Visiting Professorship in honor of H. Hudnall Ware Jr. M.D., who was professor of obstetrics and gynecology from 1942 to 1967. The visiting professorship is combined with a two-day postgraduate continuing education program which provides information regarding recent advances in obstetrics and gynecology.

The John Hoover Moon Memorial Lectureship was established in 1972 as a tribute to John Hoover Moon, M.D., professor of medicine, for his outstanding contribution to teaching and research. A graduate of the School of Medicine, 1949, he was the first clinical research fellow in the Division of Hematology. His research interests centered around the chemotherapy of malignant disease. The John Hoover Moon Memorial Foundation makes this annual lectureship possible.

The Carolyn and Howard McCue Lectureship was initiated Sept. 22, 1987, to honor both of these physicians. The annual one-day lectureship alternates each year with pediatric and medical speakers. It is supported by gifts from family, residents, fellows and



friends through the Medical College of Virginia of VCU Foundation.

In recognition of long and brilliant service to the Medical College of Virginia, the Board of Visitors established the annual Stuart McGuire Lectureship on May 27, 1929. Dr. McGuire (1867-1948) served as professor of surgery, dean, president and chair of the Board of Visitors during his lifetime. The lecture series offers topics primarily in surgery.

The annual Stoneburner Lecture Series was initiated in 1946 in memory of Dr. Lewis T. Stoneburner III, by his comrades in the 45th General Hospital, U.S. Army. Dr. Stoneburner graduated from MCV in 1937 and died in 1943 while serving his country as an army officer in North Africa. The lectures annually offer topics of current interest in medicine.

### **Combined M.D. and M.S. or Ph.D. programs**

The School of Medicine encourages applications from individuals interested in the Combined M.D./Ph.D. Program. This program provides superior preparation for a career in academic medicine or medical research. The program has successfully trained independent medical research scientists and academicians.

Students interested in this combined-degree program must be accepted by both the M.D. program and one of the Ph.D.-granting programs within the School of Medicine. The application process is simplified by acceptance of MCAT, references and transcripts used in applying to the School of Medicine. Students in the combined-degree program are given credit for basic science instructions received in the first years of medical school. Summers and elective time during these years provide excellent opportunities to begin research training. Almost the entire fourth year may be devoted to graduate school education.

The minimum requirement in addition to the first three years of medical school is one year for the master of science and two years for the doctor of philosophy degree. Because the medical school curriculum provides a very broad-based background, combined-degree students are required to take few, if any, introductory-level graduate courses. Graduate school courses

should provide in-depth education in one discipline.

Students are advised to declare their research interest in the first academic years because the use of elective and summer time may be critical in their individual schedules. For additional information, students may contact the School of Medicine Admissions Office.

### **Grading and promotions**

Each student's progress toward his/her objectives is evaluated by examination upon each subject matter and by national board examinations at appropriate times. Grades are assigned on the honors, high-pass, pass, marginal or fail basis. Students receiving marginal or failing grades are counseled. All students are assigned a faculty adviser, available to the student throughout the four years of study.

Students who have attained satisfactory grades in M-I and M-II, but who do not pass U.S. Medical Licensing Examination Step I, may receive special instruction in the basic medical sciences during the third school year, prior to their repeating the Step I examination. These students will use part of their fourth year to complete the segments omitted during the special instruction period. Those who do not show significant improvement will be reviewed by the Promotions Committee, which will formulate a plan for each student.

At the close of each academic year, the Promotions Committee, composed of department chairs, recommends to the dean which students have achieved the objectives of the year and which students are qualified for either promotion or graduation. The Promotions Committee is charged to give careful individual attention to all aspects of student achievement, effectiveness, behavior and attitude. The committee is charged not to promote any student who has failed to meet the requirements of the preceding year, or who appears unfit for the practice of medicine. When the committee determines by majority vote that a student will not be promoted, it then recommends to the dean remedial activities or dismissal in instances where no remedy is perceived. The dean reviews the recommendations and promptly notifies students that they have been promoted, have to repeat a year or

have been dismissed. A student repeating the year is expected to show significant improvement. The Promotions Committee also will meet each January to review the status of all senior students, all third-year students and M.D./Ph.D. candidates. Furthermore, the committee will review any other students in serious academic difficulty and may, at this meeting, choose to take final action, including dismissal, on such students.

An Appeals Committee of three senior faculty will hear appeals of dismissals when such are filed in writing within 14 days of the student's notice of dismissal. A student also may appeal a decision to repeat a year, but such appeals will be reviewed by the Appeals Committee only when it is found that the student will present information not previously available to the Promotions Committee. A student appealing has the right to appear before the Appeals Committee and to have an adviser participate. The dean of the School of Medicine will act upon the recommendation of the Appeals Committee within 14 days of receipt of the committee's recommendation.

### **Withdrawal**

A student may not withdraw from school prior to completion of an academic year unless granted a leave of absence by the dean. A student who leaves without such permission or who fails to return by the end of the granted term of leave is considered dismissed from the class and may return only by applying for possible re-admission. Where such a student has demonstrated any academic deficiency, the application is presented to the Promotions Committee.

### **Requirements for graduation**

The degree of Doctor of Medicine will be conferred by VCU upon candidates who, in the opinion of the medical faculty, have:

1. attained the school's educational objectives as evidenced by satisfactory completion of prescribed courses and examinations, by proven clinical skills and responsibilities, and by ethical standards,
2. attended the School of Medicine for a minimum of two years, one of which must be an academic year of clinical rotations, and

3. discharged all financial obligations to the university.

It is the policy of the School of Medicine that candidates must be present at commencement exercises unless excused by the dean.

### Student participation

The dean and faculty solicit the advice of students in conducting the affairs of the medical school. Student officers elected by their classes meet with deans and curriculum coordinators. At these meetings, each phase of the curriculum and any other matters of concern to students are discussed in detail. Each class also elects representatives to the faculty committees which design its curriculum. Students are selected by the dean and the faculty to serve on the Admissions Committee, on faculty tenure committees, and on committees to recommend appointment of deans. A continuing effort is made to improve methods for student evaluation of teaching technique. All students are welcome to visit the deans, teachers and faculty advisers at any time to volunteer opinions or seek explanations of procedures employed by the school.

### Student fellowships

Opportunities are available for study and investigation under the tutelage of faculty members in their laboratories during the summer vacation and as an extracurricular activity during the school year.

These studies are supported by the A. D. Williams fellowship endowment and the School of Medicine Alumni Association (Aesculapian Fellowships) with selections made by the A. D. Williams Research Advisory Committee.

The Robert C. Bryan Summer Fellowship in Pathology was given by Mr. Jonathan Bryan in memory of his father.

The Arthur T. Lyman Fellowship in Pathology is awarded to an outstanding student participating in the summer fellowship program. This fellowship represents a gift from Mrs. Fairfield Goodale in memory of her father.

### Financial assistance

A brief description of financial aid based on demonstrated need is contained in Part III of this bulletin. Financial need-based aid programs available to medical students include

Health Professions Student Loan, Commonwealth of Virginia Medical Scholarship, Norfolk Foundation Scholarship, Lincoln/Lane Foundation Scholarship, and various institutional loans and grants.

Information on the Commonwealth of Virginia Medical Scholarship and the other programs may be obtained from the financial aid officer in the Office of the Associate Dean of Student Activities, School of Medicine.

### U.S. Armed Forces scholarships

The Army, Navy or Air Force provides up to four years of paid tuition and fees, books and supplies allowance, and a stipend in exchange for military service after graduation. Normally, the recipient serves one year on active duty for each year of scholarship, with a minimum service of three years. Additional information may be obtained from local armed services recruiting offices.

### Honors and prizes

Student research and honors day is held in May. Begun by the American Medical Student Association, it is now a joint effort of that organization, the Alpha Omega Alpha honorary scholarship society, and the medical school. Honors and prizes in the medical school include:

**Alpha Omega Alpha.** The Brown-Sequard Chapter, established at MCV in 1940, elects to membership each year senior and junior students who have demonstrated outstanding academic achievement as evidenced by cumulative ranking in the upper one-fourth of the class. Membership is limited to a maximum of one-sixth of each class.

**Sigma Xi.** Seniors of high scholastic achievement who show promise of success in research may be elected to associate membership in the VCU chapter of this national honorary scientific society.

**Sigma Zeta.** Outstanding members of the junior and senior classes of the schools of Medicine, Dentistry, Pharmacy and Nursing are elected to this honorary scientific society.

**L. Beverly Chaney Scholarship.** For responsible leadership during the first three years of medical school, a senior scholarship of \$5,000 from the Joseph Collins Foundation in memory

of its trustee, Dr. Chaney, who graduated from the School of Medicine in 1918.

**Isaac A. Bigger Medal.** A medal awarded annually to a surgical resident for integrity, leadership, teaching and clinical ability, in memory of Dr. Bigger, professor of surgery from 1930 to 1955.

**Lee E. Sutton Jr. Prize.** Awarded to a senior student for excellence in pediatrics, in memory of Dr. Sutton, professor of pediatrics from 1938 to 1958, and dean from 1929 to 1942.

**Robert C. Bryan Prize.** For excellence in sophomore pathology, an annual award is made in memory of Dr. Bryan, professor of urology from 1917 to 1934.

**Aubrey H. Strauss Prize.** For excellence in sophomore microbiology, an annual award is made in honor of Dr. Strauss, assistant professor of microbiology from 1909 to 1924.

**H. L. Osterud Award.** The Osterud Award was established to honor the memory of Dr. Hgalmer L. Osterud, an exceptional teacher, administrator, and scholar who was professor and chair of the Department of Anatomy from 1922 to 1953. The award is made to a graduate student who has distinguished himself/herself academically, in his/her research as well as in service to the educational mission of the Department of Anatomy.

**Outstanding Pathology Graduate Student.** A prize is awarded to the pathology graduate student showing the most promise of success in research.

**A. D. Williams Award.** Awards are made to a student in each of the first three years of medical school for outstanding academic achievement.

**Ciba Award.** A set of Netter Atlas volumes is awarded to the sophomore student who has demonstrated the most beneficial extracurricular activity within the community.

**Henry Clay Smith Scholarship.** Given in memory of Dr. Henry Clay Smith, a graduate of MCV, to two M-III students most likely to emulate Dr. Smith by careers of service to the health needs of rural Virginia. Selections made by the Department of Family Practice.

**Medical Society of Virginia.** Given by the Medical Society of Virginia on the basis of financial need and academic excellence.

**Southern Medical Association.** Given by the Southern Medical

Association to two M-I students on the basis of financial need and academic excellence.

**Richard Kirkland Scholarship.**

Given by the Richard Kirkland Scholarship Fund to an M-II student on the basis of financial need and academic excellence.

**A. H. Robins Scholarship.** Given on the basis of financial need and academic excellence.

**Hoak Scholarship.** Given on the basis of financial need and academic excellence.

**Sidney B. Barham Scholarship.**

Given in memory of Dr. Sidney B. Barham Sr. Used for scholarships to deserving medical students elected by the college administration.

**Merck Manual.** Current edition of the Merck Manual donated by the Merck Company. Four awards given.

**Mosby Award.** Student receives a certificate from the Mosby Book Company and selects one book from the Mosby catalog. Three awards given.

**Lange Award.** First-, second- and third-year students receive a selection card and choose two books from the offered selection. Six awards given. Fourth-year students receive a certificate and a selection card to choose four books from the offered selection. Two awards given.

**Dean's Award.** A book selection from the MCV Campus Bookstore.

**Elizabeth Joanne Harbison**

**Award.** Given for performance during the M-III pediatric clerkship and M-IV pediatric electives. This award is restricted to students entering the field of pediatrics.

**Eric C. Schelin Award.** For outstanding work in the OB/GYN department based on academic and clinical achievement. The department provides a monetary award and the name inscribed on a plaque in the Department of Obstetrics and Gynecology.

**Harry Walker Award.** Given to a student for outstanding performance on the M-II Introduction to Clinical Medicine course. The recipient of this monetary award is selected by a committee from the Alumni Association.

**A. J. and Lee Pardoll Endowed Scholarship.** This endowed scholarship given by Peter M. Pardoll, M.D., 1971, in memory of his parents, provides a \$1,000 scholarship award for a student entering the second year of study and is based on financial need

and academic achievement. Priority is given first to students from Florida and then to non-Virginia residents.

**A. Jarrell Raper Memorial**

**Scholarship Fund.** Given in memory of Dr. A. Jarrell Raper, a graduate of MCV, to minority students on the basis of financial need.

**Elise H. and Wesley Wright Jr. Endowed Scholarship.** Given to a Princeton University graduate on the basis of financial need.

**W. Donald and Anne Tucker Moore Scholarship.** Given to a second-year student from North Carolina on the basis of financial need and academic excellence.

**Seymour Schotz Scholarship.** Given to a second-year student on the basis of financial need.

**Susan Mellette Scholarship and Fellowship Fund.** Given to students who have demonstrated interest and achievement in oncology and on the basis of academic credentials.

**Paul Dunn Scholarship.** Given to a second-year student on the basis of financial need.

**Kinloch Nelson Scholarship Award.** Given on the basis of demonstrated leadership ability, academic accomplishment and financial need.

**William Wallen Meyer Scholarship.** Given on the basis of academic achievement.

**Walther Riese Award in Neuroanatomy.** The Riese Award was established to honor the memory of a truly devoted physician, professor, researcher and humanitarian. Riese was a professor of neurology and psychiatry at the Medical College of Virginia from 1947 to 1960. The award is made to a student who has distinguished himself/herself academically in the neurosciences.

**Jack Denning Burke Award in Cell Biology.** The Burke Award was established to honor the memory of Dr. Jack Denning Burke, professor in the Department of Anatomy from 1964 to 1978, a truly great teacher and scientist, and author of a textbook in the field of cell biology. The award is made to a student who has distinguished himself/herself academically in histology/cell/molecular biology.

**Graduate degree programs (Ph.D., M.S., M.P.H., Certificate)**

The School of Medicine offers a diversity of advanced degree training programs leading to the doctor of philosophy, master of science, specialized master's and certificate degrees. Advanced degree training is coordinated through the Office of Graduate Education. Ph.D. and M.S. training is conducted through programs formally housed in the departments of Anatomy, Biochemistry and Molecular Biophysics, Biostatistics, Human Genetics, Microbiology and Immunology, Pathology, Pharmacology and Toxicology, and Physiology.

Interdisciplinary curriculum tracks in immunology, molecular biology and genetics, neuroscience, and structural biology are available through participating departments. Specialized programs at the master's level, the master of public health and the master of genetic counseling also are offered in the Department of Preventive Medicine and Community Health and the Department of Human Genetics, respectively. Additional interdisciplinary training programs in anatomy or physiology/physical therapy and combined degree programs (M.D./Ph.D., D.D.S./Ph.D., M.D./M.P.H.) are administered in the School of Medicine.

Information on admissions, requirements and application is provided in detail in the Graduate Bulletin. Contact information for the various programs and departments is listed:

**Anatomy**

Dr. John Povlishock, Chair; Contact Dr. Leichnetz, (804) 828-9512; anaapply@gems.vcu.edu

**Biochemistry**

Dr. Jan Chlebowski, Interim Chair; Contact Dr. Chlebowski, (804) 828-9526; bicapply@gems.vcu.edu

**Biostatistics**

Dr. W. H. Carter, Chair; Contact Dr. Ko, (804) 828-9824; bisapply@gems.vcu.edu

**Microbiology**

Dr. Dennis Ohman, Chair; Contact Dr. Cabral, (804) 828-2306; micapply@gems.vcu.edu

**Pathology**

Dr. David Wilkerson, Chair; Contact Dr. Ware, (804) 828-9746; patapply@gems.vcu.edu

**Pharmacology**

Dr. Billy Martin, Interim Chair; Contact Dr. Woodward, (804) 828-8902; pmcapply@gems.vcu.edu

**Physiology**

Dr. Margaret Biber, Chair; Contact Dr. Poland, (804) 828-9557; pioapply@gems.vcu.edu

**Preventive medicine**

Dr. Jack O. Lanier, Chair; Contact Dr. Lanier, (804) 828-9785; mphapply@gems.vcu.edu

**Genetic counseling**

Contact Ms. Phelps (804) 828-9632; genapply@gems.vcu.edu

**Molecular biology and genetics**

Contact Dr. Christie (804) 828-9093; christie@gems.vcu.edu

**Immunology**

Contact Dr. Tew (804) 828-9715; tew@gems.vcu.edu

**Neuroscience**

Contact Dr. Satin (804) 828-7823; lsatin@hsc.vcu.edu

**M.D./Ph.D.**

Contact Dr. Earl Ellis, Director; (804) 828-8399;

eellis@gems.vcu.edu

The School of Medicine also offers a didactic postbaccalaureate program for students seeking preparation for entry into medical school. The two-semester certificate program offers advanced basic science training in six disciplinary areas (anatomy, biochemistry and molecular biophysics, human genetics, microbiology and immunology, pharmacology and toxicology, and physiology).

**Master of Public Health**

The graduate program in public health is offered through the Department of Preventive Medicine and Community Health of the School of Medicine and leads to the Master of Public Health degree. The M.P.H. program is closely linked with regional and state public health agencies to enhance the student's appreciation and understanding of applying public health principles to practice. Information on admission and course requirements, and application forms for admission may be obtained by writing to the School of Graduate Studies, Virginia Commonwealth University, P.O. Box 843051, Richmond, VA 23284-3051, or to the Director of the M.P.H. Program, Department of Preventive Medicine and Community Health, School of Medicine, Virginia Commonwealth University, P.O. Box 980212, Richmond, VA 23298-0212.

**Course descriptions****Courses in anatomy (ANAT)****ANAT 301 Head and Neck Anatomy (Dental Hygiene).**

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Offered: I. An overview of head and neck anatomy with emphasis on oral structures.

**ANAT 302 Microscopic Anatomy (Dental Hygiene).**

Semester course; 2 lecture hours and 2 laboratory hours. 3 credits. Offered: II. A lecture course in the microscopic anatomy of general body tissues and the oral cavity.

**ANAT 501 Gross Anatomy (Dentistry).**

Semester course; 5.5 lecture and 8 laboratory hours. 9.5 credits. Offered: I. A systematic dissection and study of the human body with clinical correlation and emphasis on the head and neck.

**ANAT 502 Microscopic Anatomy (Dentistry).**

Semester course; 3 lecture and 6 laboratory hours. 6 credits. Offered: I. A study of the normal tissues and organs of the human body at the microscopic level, with emphasis on the histological organization and development of the oral cavity.

**ANAT 503 Neuroanatomy (Dentistry).**

Semester course; 1.5 lecture hours. 1.5 credits. Offered: I. This course provides the student with a broad exposure to the field of neuroanatomy. The structure and connections of the brain and spinal cord are stressed to prepare the student for dealing with physiological, pharmacological, and clinical aspects presented in other courses.

**ANAT 505 Principles of Human Anatomy (Pharmacy).**

Semester course; 2.5 lecture and 1.5 laboratory hours. 3 credits. Offered: I. The structure of the human body is surveyed by studying micro-, neuro- and gross anatomy. Emphasis is placed on basic concepts and their application to various body components.

**ANAT 509/PHIS 509/PHXT 509 Introduction to Neuroscience.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisites: Permission of instructor. Designed as an interdisciplinary introduction to the function of the central nervous system. The basic principles of neuroscience including neuronal anatomy, electrical properties of single neurons, and cell biology of neurotransmitter release are followed by a discussion of individual sensory systems and an introduction to the organization and function of discrete brain regions including cortex, basal ganglia, hypothalamus, hippocampus, and others. Understanding basic aspects of nervous system function is emphasized, with relevant clinical examples.

**ANAT 525 Advanced Functional Anatomy (Occupational Therapy).**

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Offered: I. Prerequisites: BIOL 205 or equivalent and permission of the instructor. A study of the anatomy and kinesiology of the human body using prosected specimens and the dissected cadaver. Emphasis is placed on the study of the extremities, particularly the hand.

**ANAT 529 Advanced Functional Neuroanatomy (Occupational Therapy).**

2 lecture and 2 laboratory hours. 3 credits. Offered: II. Prerequisites: ANAT 525 and permission of instructor. A study of the morphological and functional aspects of the central and peripheral nervous systems of the human body with particular emphasis on motor activity.

**ANAT 609 Gross and Developmental Anatomy.**

Semester course; 4 lecture and 10 laboratory hours. 9 credits. Offered: I. A dissection and macroscopic study of the human body, with clinical correlations.

**ANAT 610 Neuroanatomy.**

Semester course; 4 lecture and 2 laboratory hours. 5 credits. Offered: II. A study of the structure, connections and function of the central nervous system. Laboratory sessions complement lecture presentations, emphasizing light microscopic and ultrastructural neurohistology, gross and sectional anatomy of the brain, and tracing of functionally related CNS connections.

**ANAT 611 Histology.**

Semester course; 4 lecture and 2 laboratory hours. 5 credits. Offered: I. A study of the basic light and electron microscopic structure of cells, tissues, and organs. Emphasis on correlating structure with function.

**ANAT 613 Advanced Studies in Anatomy.**

1-6 credits. Offered: I, II, S. An in-depth study in specific areas of anatomy: histology, gross anatomy, and neuroanatomy.

**ANAT 614 Cytology.**

Semester course; 2 lecture hours. 2 credits. Offered: I. A topical approach to current areas of interest in mammalian cell and molecular biology.

**ANAT 690 Anatomy Research Seminar.**

1 lecture hour. 1 credit. Offered: I, II. A course consisting of faculty and student-led seminars presenting current research in neurobiology, immunobiology, and reproductive biology.

**ANAT 691 Special Topics in Anatomy.**

1-4 credits. Offered: I, II, S. Lectures, seminars, tutorial sessions, and/or library research assignments in selected areas of advanced study not available in other graduate level anatomy courses, or as concentrated emphasis on a particular area of research.

**ANAT 697 Directed Research in Anatomy.**

1-15 credits. Offered: I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

**Courses in biochemistry and molecular biophysics (BIOC)****BIOC 403-404 Biochemistry (Undergraduate).**

Continuous course; 3 lecture hours. 3-3 credits. Offered: I, II. Prerequisites: CHEM 301-302 or equivalent with permission of instructor. A presentation of structural biochemistry, enzymology, bioenergetics, intermediary metabolism, and molecular genetics.

**BIOC 501 Biochemistry (Dentistry).**

Semester course; 5 lecture hours plus clinical correlations. 5 credits. Offered: I. Prerequisite: Organic chemistry, three credits of physical chemistry, or permission of instructor. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as part of the

fundamental background of modern dentistry. Four clinical correlation workshops complement the lecture presentations.

#### **BIOC 502 Biochemistry (Medicine).**

Semester course; 3 lecture hours. 3 credits. Offered: I. Enrollment restricted to students accepted in the School of Medicine. An introduction of structural biochemistry, intermediary metabolism, cell biology and methods of biochemical analysis as part of the fundamental background of modern medicine.

#### **BIOC 503-504/MICR 503-504 Biochemistry, Cell and Molecular Biology.**

Continuous course; 5 lecture hours. 5 credits. Offered: I, II. Prerequisites: Undergraduate organic and physical chemistry, or permission of instructor. A comprehensive introductory course that describes basic biochemistry and reviews current concepts of modern cell and molecular biology.

#### **BIOC 505-506 Experimental Biochemistry.**

Continuous course; 4 laboratory hours. 2 credits. Offered: I, II. Prerequisite: BIOC 503 (or concurrent) or equivalent quantitative chemistry. Laboratory work, including theory and practice of advanced biochemical research methods.

#### **BIOC 507-508 Bioorganic Chemistry.**

Continuous course; 3 lecture hours. 3 credits. Offered: I, II. Prerequisite: Permission of the instructor. Study of structure, chemistry, and mechanism of small, biologically important molecules.

#### **BIOC 509 Biophysical Chemistry.**

Semester course; 3 lecture hours. 2 credits. Offered: I. Study of major physical/chemical concepts of biological organization with emphasis on self-assembly and dynamic interactions of biological structures.

#### **BIOC 510 Radiation Safety.**

Semester course offered on a demand basis (2-4 times or approximately 20 students per year); 15 lecture hours. 1 credit. Offered: I, II, S. Provides basic principles for the safe use of radioactive materials in biological research and meets the minimum training requirements set forth for responsible investigators in the university's Nuclear Radiation License.

#### **BIOC 516C Human Nutrition.**

Semester course; 3 lecture hours. 3 credits. Offered: I. This off-campus survey course is designed for secondary school health and physical education, and biology teachers as well as others who wish to expand their knowledge of nutrition. The course involves core as well as current issues in human nutrition and primarily involves a series of interdisciplinary lecture/discussions. Topics include: description of the biochemistry and physiology of food components and nutrients; the accepted recommendations relating to health, nutrition and exercise, physical fitness and athletic performance; as well as topics related to eating disorders; growth and development; nutrition misinformation; nutrition and health issues.

#### **BIOC 523-524 Biochemistry (Pharmacy).**

Continuous course; 2-3 lecture hours. 2-3 credits. Offered: I, II. Prerequisites: CHEM 301-302 or equivalent. A presentation of structural biochemistry, intermediary metabolism, physiological chemistry, and nutrition as a part of the fundamental background of modern pharmacy.

#### **BIOC 550 Basic Science Core Curriculum for Postgraduate Dental Students.**

Semester course; 3 lecture hours. 3 credits. Offered: I. This course is designed to provide the postgraduate dental student with the educational experience in the basic science required for the successful completion of his/her specialty training program. Selected lectures in the basic science areas related to dentistry are presented and are supplemented by assigned articles.

#### **BIOC 601 Membranes and Lipids.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years spring 1999). Prerequisite: BIOC 503-504. Comprehensive presentation of important areas in biological membrane research. Key topics include techniques in the study of membrane lipids and proteins, "order" and organization in membranes, transport, receptors and cell surface antigens, physical measurements in membranes, reconstituted systems, and signal transduction.

#### **BIOC 602 Physical Properties of Macromolecules.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisite: BIOC 503-504 and physical chemistry. Physicochemical approaches to the determination of the structure and conformation of macromolecules.

#### **BIOC 604 Enzymology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisites: BIOC 503-504. Physical and chemical properties and mechanisms of action of enzymes. Treatment of chemical catalysis, enzyme kinetics, and correlation of enzyme structure to mechanisms.

#### **BIOC 605 Molecular Biology.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisite: Undergraduate chemistry or biochemistry. Nucleic acid structure, genetic code, DNA replication, transcription, translation; structure and properties of self-assembling systems: viruses, ribosomes, cytoskeletal proteins, and membranes.

#### **BIOC 606 Biochemical Control Processes.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years spring 1998). Prerequisite: BIOC 503-504 and permission of instructor. An advanced course on aspects of control mechanisms at the molecular level.

#### **BIOC 610 Current Trends in Biochemistry.**

Semester course; 2 lecture hours. 2 credits. Offered: I. Prerequisites: BIOC 503-504. A study and literature review of common and complex biochemical substances using recent research methodology.

#### **BIOC 690 Biochemistry Research Seminar.**

Semester course; 1 credit. Offered: I, II. Reports on recent biochemical literature and research by students and staff.

#### **BIOC 691 Special Topics in Biochemistry.**

Semester course; 1-4 credits. Offered: I, II. Lectures, tutorial studies and/or special assignments in selected areas of advanced study not available in other courses or as part of research training.

#### **BIOC 697 Directed Research in Biochemistry.**

Semester course; 1-15 credits. Offered: I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

### **Courses in biostatistics (BIOS)**

#### **BIOS 513-514/STAT 513-514 Mathematical Statistics I-II.**

Continuous course; 3 lecture hours. 3-3 credits. Prerequisite: MATH 307. Probability, random variables and their properties, distributions, moment generating functions, limit theorems, estimators and their properties; Neyman-Pearson and likelihood ratio criteria for testing hypotheses.

#### **BIOS 516 Biostatistical Consulting.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. The principles dealing with the basic art and concepts of consulting in biostatistics. The nonstatistical course discusses role, responsibilities of biostatisticians, relationship between clients and consultants, method of writing reports, etc.

#### **BIOS 523/STAT 523 Nonparametric Statistical Methods.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisites: Any two courses of statistics or permission of instructor. Estimation and hypothesis testing when the form of the underlying distribution is unknown. One-, two-, and k-sample problems. Tests of randomness, Kolmogorov-Smirnov tests, analysis of contingency tables, and coefficients of association.

#### **BIOS 524 Biostatistical Computing.**

Semester course; 3 lecture hours. 3 credits. Offered: I. The Statistical Analysis System (SAS) is both a powerful computer language and a large collection of statistical procedures. Students learn how to create and manage computer data files. Techniques for thorough examination and validation of research data are presented as the initial step of a complete, computerized analysis. Descriptive statistics are computed and statistical procedures such as t-tests, contingency tables, correlation, regression, and analysis of variance then applied to the data. Special attention is paid to the applicability of each procedure. Students are encouraged to analyze their own or typical data from their discipline.

#### **BIOS 530 Elements of Biometry.**

Semester course; 5 lecture hours weekly during January and February. 2 credits. Offered: II. For dental and medical fellows; graduate students with consent. Concepts of biostatistics and epidemiology. Summary statistics and tables. Normal distribution and statistical association. Chi-square tests, t-tests, Wilcoxon test, and other tests. Sensitivity,

specificity, odds ratios, and related topics. Clinical trials, prospective and retrospective studies, and other miscellaneous topics in biostatistics and epidemiology.

#### **BIOS 531 Clinical Epidemiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II. This course is intended primarily for clinicians. Permission of the course coordinator is required for others interested in registering. Epidemiological concepts necessary for evidence based studies of medicine. Specific topics will include: cause and effect criteria, demographic rates, measures of association or effect, study designs, decision trees, meta-analysis, evaluation of the literature, sources of data, reliability and validity, bias, confounding and effect modification, screening and diagnostic tests, sensitivity, specificity, false positives, false negatives, applications of the above to diagnosis and treatment, treatment efficacy and improved patient care.

#### **BIOS 543, 544/STAT 543, 544 Statistical Methods I, II.**

Semester courses; 3 lecture hours. 3, 3 credits. Offered: I, II. Prerequisite: Graduate standing or one course in statistics and permission of instructor. Basic concepts and techniques of statistical methods, including: the collection and display of information, data analysis, and statistical measures; variation, sampling, and sampling distributions; point estimation, confidence intervals, tests of hypotheses for one and two sample problems; principles of one-factor experimental design, one-way analysis of variance, and multiple comparisons; correlation and simple linear regression analysis; contingency tables and tests for goodness of fit.

#### **BIOS 546 Linear Models.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisites: BIOS 513 and 543/553. Distribution of quadratic forms under normal theory; general linear model of full rank and less than full rank, Gauss-Markov theorem; estimability.

#### **BIOS 553-554 Applied Statistics.**

Continuous course; 3 lecture hours. 3-3 credits. Offered: I, II. Prerequisites: MATH 200-201 or equivalent and one previous course in statistics and permission of instructor. Introduces applied statistics of biostatistics intended primarily for graduate students in the Department of Biostatistics. Reviews elementary probability, theory and frequency distributions, sampling theory, principles of inference, one and two sample problems. ANOVA. Principles of experimental design. Variance components. Multiple comparison procedures. Block designs and Latin Squares. Nested ANOVA. Multiway ANOVA. Correlation and regression analysis. Multiple regression. Nonlinear regression. ANCOVA. MANOVA. Repeated measures.

#### **BIOS 571 Clinical Trials.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Concepts of data management and statistical design and analysis in single-center and multicenter clinical trials. Data management topics include the collection, edition, and validation of data. Statistical design topics include randomization, stratification, blinding, placebo- and active-control groups, parallel and crossover designs, and power and

sample size calculations. Statistical analysis topics include sequential and group sequential methods.

#### **BIOS 572 Statistical Analysis of Biomedical Data.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Statistical methodology for data sets frequently encountered in biomedical experiments. Topics include analysis of rates and proportions, epidemiological indices, frequency data, contingency tables, logistic regression, life-tables and survival analysis.

#### **BIOS 581 Applied Multivariate Analysis.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisite: BIOS 544 or 554. Focuses on multivariate statistical methods, including Hotelling's T-square, MANOVA, multivariate multiple regression, canonical correlation, discriminant analysis, partially and blocking, multivariate outliers, components and factor analysis, and GMANOVA. Presumes the material in BIOS 543-544 or BIOS 553-554, including a matrix approach to multiple regression.

#### **BIOS 615-616 Advanced Inference.**

Continuous course; 4 lecture hours. 4 credits. Offered: I, II. Prerequisites: BIOS 514 and MATH 508, or permission of instructor. Mathematical preliminaries: probability and measure; integration; modes of convergence. Decision theoretical approach to statistical inference; decision rules; admissibility. Bayes and minimax procedures, invariance; complete classes. Point estimation; unbiasedness; efficiency; M, L, and R estimators; U statistics. Hypothesis testing: the Neyman-Pearson theory; unbiasedness and invariant tests; conditional tests; permutation tests; rank tests; likelihood based tests. Interval estimation; confidence sets; relationship between confidence sets and families of tests; unbiased and invariant confidence sets. Asymptotics; stochastic convergence; statistical limit theorems; ARE; asymptotic likelihood based procedures. Overview of robust statistical procedures.

#### **BIOS 625 Analysis of Categorical Data.**

Semester course; 4 lecture hours. 4 credits. Offered: I (Alternate years beginning spring 1998). Prerequisites: BIOS 514, 554 and 572. Introduction to the theory and methods of analysis of binomial and multinomial data. Topics include exact and asymptotic analysis of contingency tables; measures of association and agreement; modeling approaches including logistic regression, loglinear models, tests; invariance, MANOVA, GMANOVA, and multiple design models, nonparametric methods; inference with covariance matrices; principal components; factor analysis; discriminant analysis; clustering; multidimensional scaling.

#### **BIOS 631-632 Multivariate Analysis.**

Continuous course; 3 lecture hours. 3-3 credits. Offered: I, II. (Alternate years beginning fall 1998.) Prerequisites: BIOS 514, 546, and 554. Introduction to the theory and methods of multivariate analysis; distributions; partial, multiple, and economical correlations; maximum likelihood and decision theoretical estimation; one-and two-sample tests; invariance: MANOVA, MANCOVA, GMANOVA, and multiple design models, nonparametric methods; inference with covariance matrices; principal components; factor analysis; discriminant analysis; clustering; multidimensional scaling.

#### **BIOS 638-639 Statistical Design and Analysis in Toxicology.**

Continuous course; 3 lecture hours. 3-3 credits. Offered: I, II (Alternate years beginning fall 1998). Prerequisites for BIOS students: BIOS 514 and 554. Prerequisite for non-biostatistics students (who can enroll on a Pass/Fail basis): BIOS 554. Classical bioassay, dose-response relationships, continuous and quantal data; probit and logit analysis; estimation of the ED50; combination experiments; low dose extrapolation and risk assessment; carcinogenicity, mutagenicity, and teratogenicity screening; overview of laboratory and experimental problems for the toxicologist. Non-biostatistics students may enroll on a pass/fail basis.

#### **BIOS 647 Survival Analysis.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternate years beginning fall 1997). Prerequisites: BIOS 514 and 554. The analysis of survival (or failure time) data, with/without censoring. Actuarial and life-table methods, nonparametric and parametric estimation of survival functions, and comparison of survival curves; regression methods, such as the Cox proportional hazards model; competing risks; sequential models; applications to clinical trials.

#### **BIOS 650 Design and Analysis of Response Surface Experiments.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternate years beginning fall 1997). Prerequisites: BIOS 546 and 554. Philosophy, terminology, and nomenclature for response surface methodology, analysis in the vicinity of the stationary point, canonical analyses, description of the response surfaces, rotatability, uniform information designs, central composite in design, and modern design criteria.

#### **BIOS 655 Quantitative Epidemiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years beginning spring 1998). Prerequisites: BIOS 554 and 572. Examines the quantitative aspects of epidemiological research. Includes causality in epidemiological research; the design, analysis, and interpretation of cohort and case-control studies; bias, confounding, and misclassification, matching, stratification, and adjusting of covariates; generalized linear models in epidemiological research, goodness-of-fit tests, and goodness-of-link tests.

#### **BIOS 660 Sequential Analysis and Advanced Design and Analysis of Clinical Trials.**

3 lecture hours. 3 credits. Offered: II (Alternate years beginning spring 1997). Prerequisites: BIOS 514 and 554. Sequential methods versus fixed sample methods; the sequential probability ratio test with extensions and modifications; some applications of Cox's theorem; overview of analysis of clinical trials; closed and truncated tests; group sequential tests in clinical trials; sequential monitoring; sequential estimation; other topics with emphasis in clinical trials.

#### **BIOS 667 Advanced Data Analysis.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years beginning spring 1998). Prerequisites: BIOS 514 and 554. Explores recently developed data analysis techniques to find the main features and underlying structure of data. Includes robust methods, bootstrap, linear model

diagnostics, cross validation, nonparametric regression, optimal transformation, ACE algorithm, projection pursuit regression.

#### **BIOS 690 Biostatistical Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Talks by the students, faculty, and visitors describing recent research or reviewing topics of mutual interest.

#### **BIOS 691 Special Topics in Biostatistics.**

Semester course; lecture and laboratory hours by arrangement. 1-4 credits. Offered: I, II, S. Lectures, tutorial studies, library assignments in selected areas of advanced study or specialized biostatistical procedures not available in other courses or as part of the research training.

#### **BIOS 697 Directed Research in Biostatistics.**

Semester course; 1-15 credits. Offered: I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

### **Courses in human genetics (HGEN)**

#### **HGEN 501/BIOL 530 Human Genetics.**

Semester course; 3 credits. Offered: I. Prerequisites: BIOL 310 and CHEM 301, 301L, 302, 302L, or equivalents. Emphasizes a broad approach, at an advanced level, to human genetics. Explores topics including cytogenetics, pedigree analysis, gene mapping, aneuploid syndromes, inborn errors of metabolism, neonatal screening, cancer, genetic engineering, behavior and intelligence, prenatal diagnosis, and genetic counseling.

#### **HGEN 502 Advanced Human Genetics.**

Semester course; 2-6 lecture hours. 2-6 credits. Offered: I, II. Prerequisite: HGEN 501 or equivalent. For human genetics graduate students only. A comprehensive study of the principles of specific areas in human genetics.

#### **HGEN 511 Human Cytogenetics.**

Semester course; 3 lecture hours. 3 credits. Offered: I. (Even years only beginning in 1998.) Prerequisites: HGEN 501 and HGEN 502. A discussion of recent advances in human cytogenetics. Topics covered will include chromosome banding techniques and ultrastructure, meiosis, numerical and structural abnormalities, fragile sites, cancer cytogenetics, methodology for linkage studies, and population cytogenetics. Clinical cases are used to illustrate the application of special diagnostic methodologies.

#### **HGEN 516 Population Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Genetic and ecological factors affecting normal and abnormal variation within and between populations of organisms, especially man.

#### **HGEN 518 Methods in Human Population Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Data analysis and discussion of methods including segregation analysis and linkage. Topics covered will include inbreeding, ascertainment, and genetic epidemiology.

#### **HGEN 525-526 Practice of Genetic Counseling.**

Continuous course; 3 lecture hours. 3-3 credits. Offered: I and II. Provides context for practice of genetic counseling through literature review and practical techniques. Places specific emphasis on pregnancy and childhood evaluation, interviewing techniques, social and ethical issues, including fieldwork in prenatal, general genetics and specialty clinics.

#### **HGEN 527-528 Medical Genetics.**

Continuous course; 3 lecture hours. 3-3 credits. Offered: I and II. Provides medical information and principles of human genetic disease with specific emphasis on the molecular basis of Mendelian disorders, disorders of sexual development, assessment of dysmorphic features, and the genetics of common diseases. Emphasizes the use of all available resource materials in genetics.

#### **HGEN 531 Dental Genetics.**

Semester course; 1 lecture hour. 1 credit. Offered: I. The basis of inheritance and variation in man, including simple and complex modes of inheritance, the nature of mutations, human chromosomal aberrations, variation in protein and antigens, genetic aspects of some syndromes, and birth defects.

#### **HGEN 600 Clinical Genetics.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Offered: I, II, and S. Prerequisite: HGEN 501 or equivalent. Practical experience in the genetic counseling clinic and on ward rounds. Includes collection and analysis of family histories, genetic counseling, and introduction to genetic nosology.

#### **HGEN 603 Mathematical and Statistical Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisite: BIOS 543-544 or equivalent. Provides an introduction to the rudiments of theoretical and applied mathematical population genetics including the segregation of genes in families, genetic linkage and quantitative inheritance. Emphasizes the methods used in the analysis of genetic data.

#### **HGEN 614 Human Biochemical and Molecular Genetics.**

Semester course; 4 lecture hours. 4 credits. Offered: I (Odd years only beginning in 1999). Prerequisites: BIOC 503-504, equivalent, or permission of instructor. Surveys the mechanisms and varieties of human gene mutations resulting in human genetic disease and emphasizes different investigational disorders using current scientific literature.

#### **HGEN 617 Segregation and Linkage Analysis.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: Introductory biostatistics or permission of instructor. Introduces the theory and practice of segregation and linkage analysis as applied to human kinship data. Emphasizes the techniques for the detection, characterization, and mapping of single loci with large effects on phenotype.

#### **HGEN 618 Advanced Segregation and Linkage Analysis.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Odd years only beginning in 1999). Prerequisite: HGEN 617 or

permission of instructor. Focuses on advanced topics related to segregation and linkage analysis. Presents alternatives to single major locus segregation patterns, advanced linkage analysis techniques such as multipoint mapping, and combined segregation and linkage analyses.

#### **HGEN 619 Quantitative Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: I. The effects of genes and environment on complex human traits with emphasis on: Genetic architecture and evolution; non-genetic inheritance; mate selection; developmental change; sex-effects; genotype-environment interaction; resolving cause from effect; design of genetic studies, statistical methods and computer algorithms for genetic data analysis.

#### **HGEN 620 Principles of Human Behavioral Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: I. (Even years only beginning in 1998.) The theory of genetic and non-genetic transmission considered in relation to the design, analysis, and interpretation of studies to identify the principal genetic and environmental causes of behavioral variation. Included will be analysis of intelligence, personality, social attitudes, and psychiatric disorders.

#### **HGEN 690 Genetics Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Selected topics in genetics presented by students and staff.

#### **HGEN 691 Special Topics in Genetics.**

1-4 credits. Offered: I, II. Lectures, tutorial studies, library assignments in selected areas of advanced study or specialized laboratory procedures not available in other courses or as part of the research training.

#### **HGEN 697 Directed Research in Genetics.**

1-15 credits. Offered: I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

### **Courses in microbiology and immunology (MICR)**

#### **MICR 365 Infection and Immunity (Dental Hygiene).**

Semester course; 3 lecture and 2 laboratory hours. 3 credits. Offered: I. A study of infectious diseases and the immune system of man with emphasis on the distribution properties and roles of pathogenic microorganisms and the varied responses of the host, with emphasis on oral pathologies. Principles of prevention, control, and chemotherapy of infectious diseases are major components of the course. Microbiological procedures that relate to nursing and dental hygiene practice are demonstrated, practiced, and evaluated in laboratory exercises and conferences.

#### **MICR 501 Microbiology.**

Semester course; 2.5 lecture and 3.5 laboratory hours. 3 credits. Offered: II. Prerequisite: BIOC 402 or equivalent. Offered in the School of Pharmacy and open primarily to pharmacy students in the junior year; others by permission of the instructor. A study of the fundamental principles of microbiology with special emphasis on those aspects of the subject that are of importance in the control of the disease state.

**MICR 503-504/BIOC 503-504 Biochemistry, Cell and Molecular Biology.**

Continuous course; 5 lecture hours. 5 credits. Offered: I, II. Prerequisites: Undergraduate organic and physical chemistry, or permission of the instructor. A comprehensive introductory course that describes basic biochemistry and reviews current concepts of modern cell and molecular biology.

**MICR 505 Immunobiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. A survey of immunobiology as a total host response to foreign agents, covering the nature of antigens and antibodies, antigen-antibody reactions, immunocompetent cells, allergic reactions, tumor immunology, transplantation immunology, and immunogenetics.

**MICR 507 Techniques in Molecular Biology and Genetics.**

Semester course; 1 or 2 lecture hours. 1 or 2 credits. Offered: I. Prerequisite: BIOC/MICR 503-504 or equivalent, permission of instructor. This course is designed to give an overview of the techniques utilized in modern molecular biology. The principles underlying techniques such as plasmid and phage cloning, RNA detection, PCR, DNA, sequencing, genomic mapping, heterologous gene expression, and production and analysis of recombinant protein will be discussed in detail by experts in the field.

**MICR 508-509 Introduction to Microbiology and Immunology Research.**

Continuous course; 1 lecture and 4 laboratory hours. 3-3 credits. Offered: I, II, and S. Prerequisite: Permission of instructor. Required of all first-year graduate students. Introduction to all active research programs in microbiology and immunology. Presentations of research programs by investigators and rotation of students through faculty laboratories to gain direct exposure to individual research projects.

**MICR 510 Scientific Integrity.**

Semester course; 1 lecture hour. 1 credit. Offered: I. A survey of contemporary issues relating to scientific integrity and ethics. Topics include scientific fraud and misconduct, peer review, use of humans and animals in biomedical research, ownership of data, intellectual property, conflict of interest, scientific record keeping, and biomedical ethics.

**MICR 512 Laboratory Safety.**

Semester course; 1 lecture hour. 1 credit. Offered: I. Describes health hazards commonly found in biomedical laboratories and appropriate safety precautions and responses. Includes hazards of working with bacteria, viruses, parasites, fungi, recombinant DNA procedures and regulations, and chemical, electrical, and fire hazards.

**MICR 513 Infection and Immunity (Dentistry).**

Semester course; 3.5 lecture and 4 laboratory hours. 5.5 credits. Offered: II. A lecture and laboratory study of the disease producing microorganisms of man with special emphasis on the roles of microorganisms in oral diseases and related topics that are of importance in dentistry.

**MICR 516 Medical Microbiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II. A comprehensive introduction to the basic principles of virology, human parasitology, bacteriology, and mycology. Interactions of the infecting agents and hosts will be stressed at the molecular and cellular level.

**MICR 519 Molecular Mechanisms of Microbial Pathogenesis.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: Undergraduate-level courses in microbiology or microbial physiology, immunology, and molecular genetics. The goals of this comprehensive course are to explore in detail the virulence mechanisms of microbes and the response of the infected host. The focus will be on important bacterial and viral pathogens.

**MICR 551 Basic Science Core Curriculum for Postgraduate Dental Students.**

Semester course; 1-3 lecture hours. 1-3 credits. Offered: II. This course is designed to provide the postgraduate dental student with the educational experience in the basic science required for the successful completion of his/her specialty training program. Selected lectures in the basic science areas related to dentistry are presented and are supplemented by assigned articles.

**MICR 604 Cell Physiology and Metabolism.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: MICR 503. An advanced course on the physiology and metabolism of prokaryotic and eukaryotic cells with some emphasis on the regulation of cell functions. Lectures and class discussions will focus on current scientific literature including review articles and original research papers.

**MICR 605 Molecular Biology and Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: Undergraduate organic and physical chemistry, or permission of the instructor. A comprehensive introductory course that describes the structure of the genetic material and the molecular mechanisms involved in its maintenance, replication, transmission and expression. Emphasis will be on experimental approaches integrating genetics and biochemistry in the studies of molecular genetics in prokaryotic and eukaryotic cellular and viral systems.

**MICR 653 Advanced Molecular Genetics.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: MICR 517 or equivalent or permission of instructor. An advanced course on the molecular mechanisms of gene regulation in prokaryotic and eukaryotic cells, with some emphasis on developmental control of gene expression, oncogenesis, and the molecular basis of antibody diversity. Lectures and class discussion will focus on current scientific literature, including original research papers and recent review articles.

**MICR 686 Advanced Immunobiology.**

Semester course; 2 lecture hours. 2 credits. Offered: II. Open primarily to residents, medical students, and graduate students with an immunology background such as MICR 506. Lectures, seminars, and conferences on basic and clinical

immunobiology. Topics have included tumor immunology, cell interactions in the immune response, genetics of the immune response, mechanisms of host-defense and membrane receptors in immunology and neoplasia.

**MICR 690 Microbiology Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminars.

**MICR 691 Special Topics in Microbiology.**

Semester course; 1-4 credits. Offered: I, II. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

**MICR 697 Directed Research in Microbiology.**

Semester course; 1-15 credits. Offered: I, II, S. Research leading to the M.S. or Ph.D. degree and elective research projects for other students.

**Course in neuroscience (NEUS)****NEUS 891 Advanced Topics in Neuroscience.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Prerequisite: Permission of instructor. Advanced topics in neuroscience with correlations to research and clinical applications. Interdisciplinary presentation of the relationship of principles of neuroscience to current areas of investigation.

**Courses in pathology (PATH)****PATH 521 Laboratory Techniques in Diagnostic Pathology.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternative years beginning fall 1999). This team taught course includes principles of automated and non-automated testing, diagnostic testing, and an active laboratory demonstration of each method.

**PATH 522 Clinical Chemistry.**

Semester course; 3 lecture hours. 3 credits. May be repeated for a maximum of 12 credits. Offered: II. Prerequisite: Permission of instructor. The metabolic basis of disease and the interpretation of laboratory data for diagnosis and patient management.

**PATH 540 Pathology for Allied Health Sciences.**

Semester course; 1.5 lecture and 1 laboratory hour. 2 credits. Explores morbid tissue changes involved in selected disease states, with emphasis on musculoskeletal and nervous systems. Provides the foundation to understanding clinical problems that physical therapists and other paramedical personnel will encounter and treat in their patients.

**PATH 570 Experimental Approaches to Tumor Biology.**

Semester course; 3 lecture/discussion hours. 3 credits. Offered: I. Introduces central problems in tumor biology and the methods available for their study. Develops through lectures and presentations skills in critical review and interpretation of research reports.



**PATH 590 Experimental Pathology Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II.

**PATH 601 General Pathology (Dentistry).**

Semester course; 3 lecture and 6 laboratory hours. 5 credits. Offered: I. Instruction in the basic principles regarding alteration of structure and function in disease and in the pathogenesis and effect of disease in the various organ systems.

**PATH 620 Special Topics in Modern Instrumental Methods.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Offered: I, II, S. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studies.

**PATH 690 Clinical Chemistry Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Graduate students, residents, and staff present topics of current interest in clinical chemistry.

**PATH 691 Special Topics in Modern Instrumental Methods.**

Semester course; 1 lecture and 2 laboratory hours. 2 credits. Offered: I, II, S. By special arrangement with instructor. A study of some of the modern research methods of molecular biology. The student gains experience with the technique concomitant with discussions with faculty. The student writes a comprehensive review of the technique studied.

**PATH 697 Research in Pathology.**

Semester course; 1-15 credits. Offered: I, II, S. Research leading to Ph.D. degree and elective research projects for other students.

**Courses in physiology (PHIS)****PHIS 206 Human Physiology.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: A "C" grade or better in BIOL 101 and 101L or equivalent. Functioning of the human body with emphasis on experimental procedures. Not applicable to the biology major.

**PHIS 206L Human Physiology Laboratory.**

Semester course; 2 laboratory hours. 1 credit. Pre or corequisites: PHIS 206. Functioning of the human body with emphasis on experimental procedures. Not applicable to the biology major.

**PHIS 309 Introductory Quantitative Physiology I.**

Semester course; 3 lecture hours and 3 laboratory hours. 4 credits. Offered: Fall semester. Prerequisite: Calculus at the level of MATH 200 and MATH 201. The course is intended for majors in Biomedical Engineering. Other students may enroll with permission of the instructor. This course is a survey course in physiology with emphasis on physical principles. It is a systems analysis of cellular anatomy, physiology and biochemistry which leads into analysis of the nervous system, musculoskeletal system and the digestive system. It

is meant to be taken as part of a two-semester series with PHIS 310.

**PHIS 310 Introductory Quantitative Physiology II.**

Semester course; 3 lecture and 3 laboratory hours. 4 credits. Offered: Spring semester. Prerequisites: Calculus at the level of MATH 200 and MATH 201 and PHIS 309. The course is intended for majors in biomedical engineering. Other students may enroll with permission of the instructor. This course is the second semester of a survey course in physiology with emphasis on physical principles. It includes a systems analysis of the cardiovascular, respiratory, renal and endocrine systems. It is meant to be taken as part of a two-semester series with PHIS 309.

**PHIS 461 Introduction to Human Physiology.**

3 lecture hours. 3 credits. Offered: I. Prerequisites: Biology, general chemistry, and human anatomy. An introductory course to human physiology based on an analysis of organ systems.

**PHIS 501 Mammalian Physiology.**

Semester course; 5 lecture hours. 5 credits. Offered: I. Prerequisites: Biology, chemistry, and physics. A comprehensive study of the function of mammalian organ systems, designed primarily for graduate students.

**PHIS 502 Mammalian Physiology (Dentistry).**

Semester course; 5 lecture hours. 5 credits. Offered: II. Prerequisites: Same as for PHIS 501. A comprehensive study of the function of mammalian organ systems, designed primarily for dental students.

**PHIS 504c Mammalian Physiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. A comprehensive study of the function of mammalian organ systems, designed primarily for high school science teachers.

**PHIS 506 Mammalian Physiology (Pharmacy).**

Semester course; 5 lecture hours. 5 credits. Offered: II. A comprehensive study of the function of mammalian organ system, designed primarily for pharmacy students.

**PHIS 509/ANAT 509/PHTX 509 Introduction to Neuroscience.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: Permission of instructor. Designed as an interdisciplinary introduction to the function of the central nervous system. The basic principles of neuroscience including neuronal anatomy, electrical properties of single neurons, and cell biology of neurotransmitter release are followed by a discussion of individual sensory systems and an introduction to the organization and function of discrete brain regions including cortex, basal ganglia, hypothalamus, hippocampus, and others. Understanding basic aspects of nervous system function is emphasized, with relevant clinical examples.

**PHIS 512 Cardiovascular and Exercise Physiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisites: PHIS 501 or permission of instructor. A comprehensive study of cell and system cardiovascular and

exercise physiology with pathophysiological implications, primarily designed for professional students. Physiological basis and introduction to the practical interpretation of the electrocardiogram will be taught with a computer-assisted method.

**PHIS 604 Cell Physiology.**

Semester course; 4 lecture hours. 4 credits. Offered: II. A description of the functional properties of cells in terms of physics and chemistry. Topics discussed include cell structure and cytochemistry, bioenergetics, secretion, transport of material across membranes, excitation, and contractility.

**PHIS 605 Mathematical Physiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. The application of set theory to physiological problems. Physiological functions and mappings. Linear transformations. The use of complex numbers. Limits, derivatives, and integrals and their use in physiology. Rate processes. Physiological function and its dependence on many variables. Probabilistic ideas in physiology.

**PHIS 606 Physical Principles in Physiology.**

Semester course; 4 lecture hours. 4 credits. Offered: II. Prerequisite: PHIS 605 or permission of instructor. A survey of those principles of physics and physical chemistry underlying physiological processes. Topics include energetics of equilibrium and nonequilibrium systems, electrode processes, reaction-diffusion systems, kinetics, photochemistry, physical techniques in physiological research.

**PHIS 612 Cardiovascular Physiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years beginning 2000). Prerequisite: Permission of instructor. An in-depth study of the original literature in selected areas of cardiovascular physiology.

**PHIS 615 Neurophysiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternate years beginning 1999). Prerequisite: PHIS 501 or permission of instructor. An in-depth study of the original literature in selected areas of neurophysiology.

**PHIS 617 Endocrine Physiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternate years beginning 2000). Prerequisites: PHIS 501 and BIOC 503 or permission of instructor. An in-depth study of the original literature in selected areas of endocrine physiology.

**PHIS 618 Renal and Epithelial Physiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years beginning 1999). Prerequisite: PHIS 604 or permission of instructor. An in-depth study of selected areas of renal and epithelial physiology. Topics include mechanisms of salt and water transport in the nephron, urinary concentrating mechanisms, hormonal regulation of ion transport, role of the kidney in acid-base homeostasis, diuretics, ion transport in amphibian epithelia, water and solute transport in gastrointestinal epithelia and lingual epithelia.

**PHIS 630 The Application of Network Thermodynamics to the Analysis and Computer Simulation of Life Processes.**

Semester course; 3 lecture and 4 laboratory hours. 5 credits. Offered: I, II. Prerequisite: Consent of instructor. Network thermodynamics applied to organization in living systems. Relations between biological and electrical networks. Simulation of nonlinear, complex, dynamic, physiological, pharmacological, and biochemical systems with applications to diffusion, blood flow, reaction kinetics, membrane transport (cellular and epithelia), endocrine effects, cellular and whole body pharmacokinetics, model design and verification, metabolic regulation and control, reaction-diffusion systems, morphogenesis, others.

**PHIS 690 Physiology Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Presentation and discussion of research reports and topics of current interest to the departmental seminar or special group seminar.

**PHIS 691 (Section 1) Special Topics in Physiology.**

1-4 credits. Offered: I, II, S. Prerequisites: A 500-level physiology course or equivalent and permission of instructor. Lectures, tutorial studies and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

**PHIS 691 (Section 3) Special Topics: Student Seminar.**

Semester course; 1 credit. Offered: I, II. Designed to develop skills in preparing and delivering lectures and other oral presentations. Students present talks on topics in which they are particularly interested, and provide mutual constructive criticism.

**PHIS 691 (Section 5) Special Topics: Nutrition Research.**

Semester course; 3 credits. Offered: I. Weekly discussion of selected topics in nutrition. Topics change yearly. Topics range from biochemical aspects of nutrition to International Nutrition, with selections from various levels of nutritional interest presented each year. Past topics have included nutrition and exercise, diet and cancer, total parenteral nutrition, alcohol nutrition, food safety, drug-nutrient interactions, nutrition and immunological response, cholesterol and nutrition, salty taste mechanisms, vitamin A, vitamin D, and intestinal calcium absorption.

**PHIS 697 Directed Research in Physiology.**

Semester course; 1-15 credits. Offered: I, II, S. Research Leading to the M.S. or Ph.D. degree and elective research projects for other students.

**Courses in pharmacology and toxicology (PHTX)**

**PHTX 400 Drugs and their Actions.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisites: Junior or senior or permission of instructor. This course is a general survey of pharmacology and related disciplines. The history and basic principles are presented followed by discussions of neuropharmacology, psychoactive

drugs, drugs of abuse, immunopharmacology, basic toxicology, drug design, drug development, autonomic pharmacology, cardiovascular pharmacology, and endocrine pharmacology, as well as selected topics including scientific ethics, molecular pharmacology, and behavioral pharmacology.

**PHTX 441 Pharmacology (Dental Hygiene).**

Semester course; 5 lecture hours. 5 credits. A didactic course designed to emphasize the principles of pharmacology and pain control and the rationale of drug actions, uses, and adverse effects.

**PHTX 509/ANAT 509/PHIS 509 Introduction to Neuroscience.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisites: Permission of instructor. Designed as an interdisciplinary introduction to the function of the central nervous system. The basic principles of neuroscience including neuronal anatomy, electrical properties of single neurons, and cell biology of neurotransmitter release are followed by a discussion of individual sensory systems and an introduction to the organization and function of discrete brain regions including cortex, basal ganglia, hypothalamus, hippocampus, and others. Understanding basic aspects of nervous system function is emphasized, with relevant clinical examples.

**PHTX 515 Pharmacology for Nurse Anesthetists I.**

Semester course; 3 lecture hours. 3 credits. Offered: I. The basic principles of pharmacology including mechanisms of absorption, distribution, biotransformation, elimination, dose-response relationships, drug and receptor interactions are presented followed by a detailed discussion of autonomic, cardiovascular, and renal pharmacology as it relates to nurse anesthesia. Detailed presentation of the pharmacology of classes of drugs used by nurse anesthetists will be made, with emphasis on general anesthetics.

**PHTX 516 Pharmacology for Nurse Anesthetists II.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisite: PHTX 515. Detailed presentation of the pharmacology of classes of drugs used or encountered by nurse anesthetists will be made with emphasis upon local anesthetics, cardiovascular, chemotherapeutic, and anti-inflammatory agents. Continuation of PHTX 515.

**PHTX 535 Introduction to Toxicology.**

Semester course; 4 lecture hours. 4 credits. Offered: II. The basic principles of toxicology and toxicological evaluations; correlations of toxicological responses with biochemical, functional and morphological changes; environmental (including occupational and public health), forensic and regulatory concerns; and risk assessment and management are presented for graduate students in the biomedical sciences.

**PHTX 536 Principles of Pharmacology and Toxicology.**

Semester course; 5 lecture hours. 5 credits. Offered: II. Prerequisites: PHIS 501 and BIOC 503 or permission of instructor. A comprehensive course in pharmacology for graduate students. The mechanisms of action of major classes of pharmacologically active agents and basic principles of pharmacology are discussed. Topics include drug absorption,

distribution, and metabolism; chemotherapy; endocrine pharmacology and principles of toxicology/immunotoxicology.

**PHTX 537 Principles of Pharmacology and Toxicology.**

Semester course; 5 lecture hours. 5 credits. Offered: I. Prerequisites: PHTX 536 or with permission of instructor. Topics include receptor theory, autonomic, cardiovascular, and central nervous system pharmacology and toxicology. Continuation of PHTX 536.

**PHTX 548 Drug Dependence.**

Semester course; 3 lecture hours. 3 credits. Offered: I, II. Prerequisite: Graduate or post-baccalaureate standing. A broad survey course in problems of drug and alcohol use and abuse. It will focus on the pharmacology of abused drugs as well as a study of the psychological and sociological factors in drug-taking behavior, rehabilitation methods, and prevention. This course may not be taken in lieu of any pharmacology offerings in the professional schools on the MCV Campus.

**PHTX 597 Introduction to Pharmacological Research.**

Continuous course; 1-12 credits. Offered: I, II. Prerequisite: Permission of instructor. Rotation research in pharmacology and toxicology laboratories for beginning graduate students.

**PHTX 603 Principles of Pharmacology (Pharmacy).**

Semester course; 2.7 lecture and 0.3 laboratory hours. 3 credits. Offered: I. The basic principles of pharmacology and an in-depth consideration of the biodisposition and mechanisms of action of these agents. Drugs acting on the autonomic nervous system, chemotherapeutic agents, and endocrine agents are covered this semester.

**PHTX 604 Pharmacological Agents (Pharmacy).**

Semester course; 3.7 lecture and 0.3 conference hours. 4 credits. Offered: II. Includes drugs acting on the cardiovascular and central nervous system and principles of toxicology. This is a continuation of PHTX 603.

**PHTX 609 General Pharmacology and Pain Control.**

Continuous course; 2 lecture hours per week for 2 semesters. One grade for 4 credits at end of second semester. Offered: I, II. The basic principles of pharmacology, including mechanisms of absorption, distribution, biotransformation, elimination; dose-response relationships, drug-receptor interactions are presented followed by detailed discussions of the various classes of drugs, with special consideration given to mechanisms of action and toward effects of drugs used in dentistry to control pain and related symptoms.

**PHTX 620/PHIS 620 Ion Channels in Membranes.**

Semester course; 3 lecture hours. 3 credits. Offered: II. (Alternate years beginning spring 2001.) Previous course work including basic concepts in electrophysiology, such as those covered in PHIS 501 Mammalian Physiology or PHTX/PHIS/ANAT 509 Introduction to Neurosciences, is highly recommended. Detailed presentation of the fundamental biophysical properties of ionic channels in membranes including the elementary properties of pores, molecular mechanisms of ionic selectivity, mechanisms of drug block, structure-function relationships, and basis for channel

gating. Discussion will encompass modern techniques for studying ion channel function.

#### **PHTX 625 Biochemical Pharmacology.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternate years fall 2000). Prerequisite: PHTX 536 or consent of instructor. Covers biomedical and molecular biology approaches to pharmacological problems. Emphasizes signal transduction, oncogenes, protein kinases and the control of cellular proliferation. Examines uptake, metabolism and intracellular effects of anticancer drugs, particularly the interaction with DNA.

#### **PHTX 632 Neurochemical Pharmacology.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years spring 2001). Prerequisites: PHTX 536 or consent of instructor. Investigates the mechanisms of drugs acting on the central nervous system in relation to their effects on endogenous neurochemical systems. Examines the milieu in which drugs act upon the central nervous system, experimental techniques frequently used in neuropharmacology, specific neurotransmitter systems, as well as the mechanisms of action of specific drugs.

#### **PHTX 633 Behavioral Pharmacology.**

Semester course; 3 lecture hours. 3 credits. Offered: I (Alternate years fall 2001). This is a survey course covering research on the effects of drugs on behavior. The major emphasis will be on schedule-controlled learned behavior. Additional topics will include drug self-administration, drug discrimination, and conditioned drug effects and behavioral toxicology. The course focuses primarily on laboratory research in animals although human research will also be covered. The relevance of this research literature to drug treatment of behavioral disorders and substance abuse will be discussed.

#### **PHTX 637 Cellular Pharmacology.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years spring 2000). Prerequisite: PHTX 536 or permission of instructor. The principles governing the interactions of drugs and hormones with their cellular receptors are presented followed by a discussion of the biochemical mechanisms by which the interactions are transduced into specific cellular responses. Lectures are supplemented with demonstrations and student presentations of current literature in the area.

#### **PHTX 638 Cellular Mechanisms of Toxicology.**

Semester course; 3 lecture hours. 3 credits. Offered: II (Alternate years spring 2001). Prerequisite: PHTX 536 or permission of instructor. A holistic approach is taken to describe and analyze toxicological information. Intact animal, organ, cellular, and biochemical responses to toxic agents are presented. Immunologic, genetic, endocrine, and central nervous system paradigms and their relationship to the mechanism of action of toxic agents as well as the predictive value of tests of these systems are presented. Kinetics and metabolism of toxic agents as well as statistical and analytical procedures are integrated into the discussions.

#### **PHTX 639 Drug Development.**

Semester course; 1 lecture and 4 laboratory hours. 3 credits. Offered: I (Alternate years fall 2000). Prerequisites: PHTX 536 and 537 or their equivalents. The principles of drug screening, advanced testing, and procedures necessary prior to the clinical evaluation of new products are described. An emphasis is placed on physiological type procedures used in pharmacology.

#### **PHTX 644 Forensic Toxicology.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. Offered: II (Alternate years spring 2000). Lecture and demonstrations in which common poisons and groups of poisons are discussed as to detection, diagnosis, and treatment of poisoning. Demonstrations include basic principles of analytical toxicology, forensic science, and courtroom testimony.

#### **PHTX 690 Pharmacology Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Offered: I, II. Members of the departmental staff, students, and visiting lecturers participate in discussions on topics of current and historical interest.

#### **PHTX 691 Special Topics in Pharmacology.**

Semester course; 1-4 credits. Offered: I, II, S. Prerequisite: Permission of instructor. Special topics in pharmacology or toxicology covered in less detail in other courses will be studied in depth in this course.

#### **PHTX 697 Directed Research in Pharmacology.**

Semester course; 1-15 credits. Offered: I, II, S. Research leading to the M.S. or Ph.D. degree and elective projects for other students.

### **Courses in preventive medicine and community health (PMCH)**

#### **PMCH 511-512 Basic Industrial Hygiene I and II.**

Continuous course; 3 lecture hours. 3 credits. Offered: I, II, and S. Basic concepts including: epidemiology, industrial toxicology, biological monitoring dermatosis, sampling strategy, solvents, particulates, respiratory protection, ventilation, sound, heat stress, radiation, ergonomics, special topics, and the regulatory aspects.

#### **PMCH 521 Regulation of Toxic Substances.**

Semester course; 3 lecture hours. 3 credits. Offered: I. This course introduces the student to the administrative law and policy issues. This course examines the Clean Water Act, Clean Air Act, Resources Conservation and Recovery (RCRA), Federal Facility Compliance Act, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA-Superfund), Toxic Torts; Real Estate Issues; Recovery of Money Damages; Criminal Law, Occupational and Mine Safety and Health Acts (OSHA/MSHA), Workman's Compensation; Occupational Disease; Victim Compensation, Safe Drinking Water Act; Pollution Prevention Act, Food Drug and Cosmetic Act, RCRA and Superfund Regulations & Case Law; State Hazwaste/Superfund Programs, Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA); Lead Based Paint Poisoning Prevention Act,

Radiation Law and Regulation; Transportation, Marine Sanctuaries Act; International Environmental Law.

#### **PMCH 531/BIOS 531 Clinical Epidemiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisite: Must have completed statistics course before being given permission to take epidemiology course with permission of instructor. A survey course which focuses on the concepts of epidemiology and its role in risk assignment. This course will distill the underlying theory and the principles used by epidemiologist. The course will introduce the sources and uses of vital data, their conversion into morbidity and mortality rates and indices. Procedures such as age standardization and abridged life table will be introduced, as will concepts of disease transmission, epidemiology and various summary statistics. The Surgeon General's criteria for causation will be examined, designs in epidemiological research reviewed, and the use and limitations for epidemiological data in risk assessment described. Students should have a current VAX account and some background in mathematics and elementary statistics.

#### **PMCH 541 Principles of Waste Management.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Design and operation of waste treatment, storage, disposal and control processes will be covered. Design tanks, landfills, and incinerators will be discussed in detail. Data acquisition and interpretation methods needed for process control and monitoring will be examined.

#### **PMCH 543/BIOS 543/STAT 543 Statistical Methods I.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Graduate standing, or one course in statistics and permission of instructor. Basic concepts and techniques of statistical methods, including: the collection and display of information, data analysis, and statistical measures; variation, sampling, and sampling distributions; point estimation, confidence intervals, and tests of hypotheses for one and two sample problems; principles of one-factor experimental design, one-way analysis of variance, and multiple comparisons; correlation and simple linear regression analysis; contingency tables and tests for goodness of fit. Students may not receive degree credit for both STAT 541 and STAT 543. STAT 543 is not applicable toward the M.S. degree in mathematical sciences or the M.S. degree in computer science.

#### **PMCH 571 Principles of Epidemiology.**

Semester course; 2 lecture hours and 1 seminar. 3 credits. Offered: I. Offers the theoretical foundation for understanding the health problems and needs of American society and uses scientific and social knowledge to examine factors that cause and alter the course of health problems in selected populations.

#### **PMCH 583 Industrial Ventilation.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Principles of design and evaluation of local exhaust systems. Principles of airflow, characteristics of pressure losses, and selection of air cleaners and air moving.

**PMCH 600 Introduction to Public Health.**

Semester course; 3 lecture hours. 3 credits. Offered: I, II. Describes the public health system in the United States. Explores the disease prevention and philosophy and foundations of public health management, economics, law, ethics and education. Examines the use of epidemiology and statistics to determine personal, environmental, and occupational health problems.

**PMCH 602/HADM 602 Health Care Organization and Services.**

Semester course; 3 lecture hours. 3 credits. Examines the structure and functions of the American health care industry, the concepts and processes of health and illness, the institutional and individual providers of health services and related concepts.

**PMCH 603 Public Health Policy and Politics.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Provides an understanding of the public health policy development process, the influence of politics and special interest groups on this process, and current governmental policies for the provision of major public health services. The legislative process is a major focus of the course.

**PMCH 604 Principles of Occupational and Environmental Health II.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Basic principles of occupational and environmental health are presented, with emphasis on biological, chemical, and physical factors that influence human health. Current workplace and public health safety and regulatory issues are emphasized.

**PMCH 605 Epidemiology of Health Behaviors.**

Semester course; 3 lecture hours. 3 credits. Offered: I, II. Prerequisites: BIOS 543 and PMCH 571. Provides an overview of the epidemiology of specific health-related behaviors, the relationships between these behaviors and health outcomes, and available evidence for the effectiveness and appropriateness of various approaches to modification of these behaviors. This material will be covered in the contexts of theories of health-related behavior and of methodological issues concerning the assessment of these behaviors and their relationships to outcomes of interest. The applicability of this material to underserved populations will be emphasized. The course format, as far as possible, will be that of an interactive seminar.

**PMCH 606 Epidemiologic Methods II.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Prerequisites: BIOS 543 and PMCH 571. Examines the whys and hows of determining major population health risks. Focuses on the design of a research project to determine the risks to health of an identified population using sampling and survey techniques, data collection and data analysis.

**PMCH 607 Nutritional Epidemiology.**

Semester course; 3 lecture hours. 3 credits. Offered: II. This course focuses on methods of measuring exposures to dietary factors for epidemiological investigations of diet-disease relationships and risk assessment. An introductory course in basic epidemiology is a prerequisite. Students

learn to select the most appropriate method(s) of collecting and analyzing food intake and to evaluate the adequacy of dietary assessment methods used in published epidemiological studies.

**PMCH 610 Environmental and Occupational Epidemiology.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Prerequisites: BIOS 543 and PMCH 571. This course is designed to provide students with an overview of the principles, methods and content of environmental and occupational epidemiology with a focus on designing, conducting, and interpreting studies on the effects of chemical and physical agents. Students will critique published occupational and environmental epidemiology studies, learn how to evaluate the potential for cause-effect relationships, and become familiar with the role of epidemiology in human health risk assessment. Each session will include a seminar component where exercises are completed and/or published papers will be critiqued and discussed.

**PMCH 615 Public Health Issues and Interventions in Communities of Color.**

Semester course; 3 lecture hours. 3 credits. Offered: I. This course is an overview of many critical psychological, social, cultural, demographic, biological, and other factors that influence lifestyle and disease susceptibility among minority status ethnic groups and other medically underserved populations in the United States. A lecture/discussion seminar format will be used, along with readings, student presentations and guest lecturers working in the field, to: (1) improve the students' understanding of the underpinnings of health status differences across communities; and (2) provide students with tools that can be used in developing effective interventions to address the maldistribution of health risk behavior and disease burden.

**PMCH 616 Public Health Education.**

Semester course; 3 lecture hours. 3 credits. Offered: II. Provides the student with an examination of theory and practice of public health education. This examination represents an overview of selected topics that are congruent to the Responsibilities and Competencies for Entry-Level Health Educators. Specifically, course content will be centered around assessing individual and community needs for health education programs, coordinating provision of health education services, acting as a resource person in health education, and communicating health and health education needs, concerns, and resources.

**PMCH 617/HADM 626 International Health.**

Semester course; 3 lecture hours. 3 credits. Offered: I, II. Provides an overview of and/or introduction to international health. Focus is on the relationship between external factors and the health of populations.

**PMCH 618 Public Health Law.**

Semester course; 3 lecture hours. 3 credits. Offered: I. Provides the student with the structure of the legal system and statutes and regulations governing state and local health departments. This course examines the federal public health laws, medical malpractice, privacy and confidentiality issues, mental health laws, abortion and sterilization,

patients rights, emergency medical care law, human experimentation, rights of the terminally ill, AIDS law, occupational and environmental health law, and health planning and reimbursement law.

**PMCH 619 Intentional Injury.**

Semester course; 3 lecture hours. 3 credits. Offered: I, S. Examines the number, distribution, and impact of intentional injuries in the United States, as well as some of the crucial psychological, social, cultural, demographic, economic, biological, and other factors associated with their cause, control, and prevention. Through lectures and dialogue, expert panels, student presentations, reading, and other assignments, students are expected to become acquainted with theory and research findings from the behavioral sciences, behavioral epidemiology, public health, and other sources that are likely to contribute to: (1) a greater comprehension of the magnitude and complexities of violence and intentional injuries in American life and (2) advancements in our capacity to successfully confront this epidemic with public health and related measures.

**PMCH 691 Program Research Project.**

Semester course; 9 clinical hours. 1-6 credits. Offered: I, II, and S. Each student will complete a research project that demonstrates the application of the knowledge acquired in the MPH Program. The student will answer one or more relevant research questions. The final product is a scholarly written report of publishable quality. A proposal must be submitted for approval and credits are assigned commensurate with the complexity of the project. Arrangements are made directly with the faculty adviser.

**PMCH 692 Special Topics (Nutrition Research).**

Semester course; 3 lecture hours. 1-6 credits. Offered: I, II. This course consists of weekly discussions of selected topics in nutrition led by the faculty plus an assigned paper and presentation at the end of the semester by each student. The topics to be presented by the faculty include: food safety, the aspartame example; diet, nutrition and cancer; exercise and nutrition; the vitamin A story; the FDA and food safety; nutrition and GI motility; nutrition assessment techniques; nutrition of the critically ill; the vitamin D story; cholesterol nutrition; nutrition and wound healing; how salty taste works; stable isotopes in nutrition studies.

## Department of Anatomy

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**John T. Povlishock**

Professor and Department Chair (1973)

B.S. 1969 Loyola College

M.S. 1971 and Ph.D. 1973 St. Louis University

Astruc, Juan A. (1967) Professor

M.D. 1957 and Ph.D. 1959 University of Granada, Spain

Bigbee, John W. (1982) Associate Professor

B.A. 1971 and M.A. 1974 Humboldt State University

Ph.D. 1982 Stanford University

Broaddus, William C.,\* Associate Professor

Bullock, M. Ross,\* Professor

Colello, Raymond J. (1996) Professor

B.S. 1980 Western Illinois University

Ph.D. 1990 Oxford University

Costanzo, Richard M.,\* Professor of Anatomy and Physiology  
 Finucane, Sheryl,\* Assistant Professor  
 Goldberg, Stephen J. (1973) Professor  
 B.A. 1965 Antioch College  
 Ph.D. 1971 Clark University  
 Gudas, Stephen A. (1998) Assistant Professor  
 Haar, Jack L. (1971) Professor and Dean, School  
 of Graduate Studies  
 B.S. 1964 Capital University  
 M.S. 1966 University of Arizona  
 Ph.D. 1970 Ohio State University  
 Johnson, James H. (1971) Professor  
 B.A. 1966 University of Northern Iowa  
 Ph.D. 1970 University of California, Los Angeles  
 Krieg Jr., Richard J. (1975) Professor  
 B.S. 1967 University of San Francisco  
 M.S. 1969 and Ph.D. 1975 University of California,  
 Los Angeles  
 Leichnetz, George R. (1970) Professor  
 B.S. 1964 Wheaton College  
 M.S. 1966 and Ph.D. 1970 Ohio State University  
 Mayer, David J.,\* Professor of Anatomy and Anesthesiology  
 McClung, John Ross (1974) Associate Professor  
 B.S. 1966 Auburn University  
 Ph.D. 1971 University of Texas  
 Merchant, Randall E. (1982) Professor  
 B.A. 1973 St. Mary's College  
 M.S. 1976 and Ph.D. 1978 University of North Dakota  
 Meredith, M. Alex (1983) Associate Professor  
 B.A. 1975 Wake Forest University  
 M.A. 1978 Johns Hopkins University  
 Ph.D. 1981 Virginia Commonwealth University  
 Phillips, Linda L., Assistant Professor  
 Ramoa, Ary S. (1993) Assistant Professor  
 M.D. 1979 and M.S. 1981 University of Rio De  
 Janeiro, Brazil  
 Ph.D. 1986 University of California, Berkeley  
 Reeves, Thomas M. (1994) Assistant Professor  
 B.A. 1976 and M.A. 1978 Sangamon State University  
 Ph.D. 1983 Southern Illinois University  
 Seibel, Hugo R. (1967) Professor and Associate Dean for  
 Student Affairs, School of Medicine  
 B.S. 1960 Brooklyn College  
 Ph.D. 1967 University of Rochester  
 Shall, Mary Snyder,\* Assistant Professor  
 Sholley, Milton M. (1976) Professor  
 B.S. 1969 Mehlenberg College  
 Ph.D. 1974 Temple University  
 Simpson, David G. (1998) Assistant Professor  
 Spencer, Robert F. (1977) Professor  
 B.S. 1971 Boston University  
 Ph.D. 1974 University of Rochester  
 Szakal, Andras K. (1979) Professor  
 B.A. 1961, B.S. 1963 and M.A. 1963 University  
 of Colorado  
 Ph.D. 1972 University of Tennessee

#### **Emeriti faculty**

Craig, Shirely, Professor Emerita  
 Geeraets, Ragnit E., Associate Professor Emerita

Harris, Thomas M., Professor Emeritus  
 B.A. 1949 Emory University  
 Ph.D. 1962 University of North Carolina  
 Hegre, Erling S., Professor Emeritus  
 B.A. 1931 Luther College  
 M.S. 1941 and Ph.D. 1942 University of Minnesota  
 Jollie, William P., Professor Emeritus  
 B.A. 1950 Lehigh University  
 M.S. 1952 Lehigh University  
 Ph.D. 1959 Harvard University

#### **Affiliate faculty**

Christman, Carole Clemo, Ruth  
 Ellison, Mary D. Taubenberger, Jeffery

\* Joint or secondary appointment

### **Department of Anesthesiology**

#### **Carlos U. Arancibia**

Interim Chair

Aghdami, Aliasghar (1973) Professor  
 M.D. 1957 Tabriz University, Iran  
 Ali, Zubair (1999) Associate Professor  
 Baines, Edward F. (1990) Assistant Professor  
 B.S. 1979 Old Dominion University  
 M.D. 1984 Medical College of Virginia of Virginia  
 Commonwealth University  
 Barker, Sandra B.\* (1990) Associate Professor of  
 Anesthesiology and Psychiatry  
 B.A. 1972 University of Florida  
 M.S. 1976 and Ph.D. 1978 Florida State University  
 Berger, Brian E. (1991) Research Assistant  
 B.S. 1975 University of Richmond  
 Bullock, M. Ross\* (1992) Associate Professor of Anatomy,  
 Anesthesiology and Surgery  
 M.B.Ch.B. 1975 Birmingham University  
 F.R.C.S. 1980 and F.R.C.S. 1983 Royal College of Surgeons  
 of Edinburgh  
 Cooper, Catherine L. (1996) Assistant Professor  
 B.A. 1979 and M.D. 1990 University of North Carolina,  
 Chapel Hill  
 Culbert, James P.\* (1981) Associate Professor of  
 Anesthesiology and Psychiatry  
 B.A. 1972 State University of New York, Buffalo  
 B.S. 1974 and Ph.D. 1979 University of Florida  
 Dunwiddie, Walter C. (1984) Assistant Professor  
 A.A.S. 1972 and B.S. 1976 Shenandoah College  
 M.D. 1981 Medical College of Virginia of Virginia  
 Commonwealth University  
 Escandon, Jorge Patricio, Associate Professor  
 Fran, David F., Assistant Professor  
 Garrett, Allen R. (1996) Assistant Professor  
 Gehr, Lynne C. (1987) Assistant Professor  
 B.S. 1976 University of Arizona  
 M.D. 1981 West Virginia University  
 Haller, Deborah L.\* (1987) Associate Professor of  
 Anesthesiology and Psychiatry  
 B.A. 1972 Ohio State University  
 M.A. 1975 and Ph.D. 1980 University of Alabama  
 Hudson, Joanne C. (1987) Associate Professor  
 B.S. 1966 University of Rhode Island  
 M.D. 1971 Tufts University  
 Hummel III, Russell S. (1985) Research Assistant  
 B.S. 1977 Virginia Polytechnic Institute and State  
 University  
 M.S. 1992 Medical College of Virginia of Virginia  
 Commonwealth University  
 Hurt, Terry W. (1989) Assistant Professor  
 B.S. 1980 Vanderbilt University  
 M.D. 1985 University of Tennessee  
 Johnson, E. Bruce (1983) Assistant Professor  
 B.A. 1968 University of Virginia  
 M.D. 1972 Medical College of Virginia of Virginia  
 Commonwealth University  
 Justis, Gina B., Assistant Professor  
 Kallar, Surinder K. (1976) Professor  
 M.D. 1966 Medical College, Rohtak, India  
 Kane, Francis R. (1973) Associate Professor  
 B.S. 1965 Loyola College  
 M.S. 1970 and Ph.D. 1973 College of William and Mary  
 Kierce, Jeannette F., Assistant Professor  
 Kim, David (1998) Assistant Professor  
 Kirby, Mathis A. (1986) Assistant Professor  
 B.A. 1977 Mount Holyoke College  
 M.D. 1981 Columbia University  
 Lester, Denise D. (1996) Instructor  
 B.A. 1987 Hampton University  
 M.D. 1992 University of Medicine and Dentistry of New  
 Jersey  
 Lewelt, Wlodzimierz (1982) Associate Professor  
 M.D. 1965 and Ph.D. 1976 Medical Academy  
 Marshall, Kathy L. (1992) Instructor  
 B.S. 1988 Southern Mississippi  
 M.D. 1992 University of Mississippi  
 Mayer, David J. (1972) Professor  
 B.A. 1966 Hunter College  
 Ph.D. 1971 University of California, Los Angeles  
 Mickell, John Joseph\* (1978) Professor of Anesthesiology  
 and Pediatrics and Chair, Division of Pediatric Critical  
 Care Medicine  
 B.S. 1968 Manhattan College  
 M.D. 1972 Columbia University  
 Moore, Charles H.,\* Associate Professor  
 Nakatsuka, Mitsuru (1983) Associate Professor  
 M.D. 1964 Keio University, Japan  
 Noble, Jason, Assistant Professor  
 Pan, Peter H. (1990) Associate Professor  
 B.S.E.E. 1977 and M.S.E.E. 1979 Virginia Polytechnic  
 Institute and State University  
 M.D. 1986 Eastern Virginia Medical School  
 Ross, Vernon H. (1985) Assistant Professor  
 B.A. 1975 Fisk University  
 M.D. 1979 Meharry Medical College  
 Shah, Jagdip B. (1989) Associate Professor  
 M.B.B.S. 1974 Municipal Medical School, India  
 Shakin, Paul C., Assistant Professor  
 Shapiro, Jay H. (1989) Associate Professor  
 B.A. 1973 Texas A & M University  
 M.D. 1985 University of South Alabama  
 Spiess, Bruce D., Professor

Stallings, L. Robert (1990) Assistant Professor  
 B.S. 1975 University of Virginia  
 M.D. 1982 Medical College of Virginia of Virginia  
 Commonwealth University

Trikha, Gita (1996) Instructor  
 M.B.B.S. 1984 Kasturba Medical College

Tyler, Betty L. (1983) Research Assistant  
 A.S. 1964 Johnston-Willis  
 B.S. 1992 Virginia Commonwealth University

Wade, James B.\* (1984) Associate Professor of  
 Anesthesiology and Psychiatry  
 B.A. 1979 State University of New York  
 Ph.D. 1984 University of Chicago

Ward, John D.\* (1991) Professor of Anesthesiology  
 and Surgery  
 B.S. 1966 Xavier University  
 M.D. 1970 University of Cincinnati

#### Emeriti faculty

Boyan, Charles Paul, Professor Emeritus  
 M.D. 1941 University of Sofia, Bulgaria  
 D.D.S. 1947 University of Graz, Austria

Keenan, Richard L., Professor Emeritus  
 M.D. 1957 Creighton University

Rafii, Amir, Professor Emeritus  
 M.D. 1954 University of Tehran, Iran

#### Clinical faculty

Brown, Dannee	Dunnivant, Barbara
Korte, L. Catherine	Kriplani, Leela
Leich, Keith	Littlewood, Keith E.
Long, Stephen P.	Martin, Daniel
Pinsker, M. Craig	Tanguma, Pat
Young, Alicia H.	

\* Joint or secondary appointment

### Department of Biochemistry and Molecular Biophysics

#### Jan F. Chlebowsky

Professor, Associate Dean and Interim Chair (1979)  
 B.A. 1965 St. Mary's College  
 Ph.D. 1969 Case Western Reserve University

Abraham, Donald,\* Professor of Biochemistry and Molecular  
 Biophysics and Medicinal Chemistry and Chair,  
 Department of Medicinal Chemistry

Banks Jr., William L. (1965) Professor of Biochemistry and  
 Molecular Biophysics and Surgery  
 B.S. 1958 Rutgers University  
 M.S. 1961 Buchnell University  
 Ph.D. 1963 Rutgers University

Broga, Dean W.\* (1975) Associate Professor of Biochemistry  
 and Molecular Biophysics and Radiology and Director,  
 Environmental Health and Safety  
 B.S. 1974 Lowell Technological Institute  
 M.S. 1976 University of Lowell  
 Ph.D. 1983 University of Virginia

Chan, James C.\* (1977) Professor of Biochemistry and  
 Molecular Biophysics and Pediatrics and Chair, Division of  
 Pediatric Nephrology  
 C.M. 1964 and M.D. 1964 McGill University

Clore, John N.\* (1988) Associate Professor of Biochemistry  
 and Molecular Biophysics and Internal Medicine  
 B.S. 1976 and M.S. 1977 Virginia Commonwealth  
 University  
 M.D. 1982 Medical College of Virginia of Virginia  
 Commonwealth University

Deb, Sumitra, Professor

Deb, Swati, Associate Professor

Delorenzo, Robert,\* Professor of Biochemistry and Molecular  
 Biophysics and Neurology

Diegelmann, Robert F. (1972) Professor of Biochemistry and  
 Molecular Biophysics and Surgery  
 Ph.D. 1970 Georgetown University

Franson, Richard C.\* (1975) Professor and Director,  
 Technology Transfer  
 B.S. 1965 University of Massachusetts  
 M.S. 1970 and Ph.D. 1972 Wake Forest University,  
 Bowman Gray School of Medicine

Gil, Gregorio (1997) Associate Professor  
 B.S. 1977, M.S. 1978 and Ph.D. 1981 University of  
 Barcelona

Graham, Martin F.\* (1980) Professor of Biochemistry and  
 Molecular Biophysics and Pediatrics  
 M.D. 1973 and M.B.Ch.B. 1973 University of Capetown,  
 South Africa

Grant, Steven,\* Professor

Grogan Jr., William McLean (1975) Professor  
 B.S. 1967 Belmont College  
 Ph.D. 1972 Purdue University

Hylemon, Phillip B.\* (1972) Professor of Biochemistry and  
 Molecular Biophysics and Microbiology and Immunology  
 B.S. 1967 Atlantic Christian College  
 Ph.D. 1971 Virginia Polytechnic Institute and State  
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Kirby, Donald F.\* (1985) Professor of Biochemistry and  
 Molecular Biophysics and Internal Medicine  
 B.S. 1975 and M.D. 1979 George Washington University

Muddiman, David\* (1997) Assistant Professor of  
 Biochemistry and Molecular Biophysics and Chemistry

Peterson, Darrell Lynn (1978) Professor  
 B.S. 1966 and Ph.D. 1970 University of Notre Dame

Rizzo, William B.\* (1982) Professor of Biochemistry and  
 Molecular Biophysics and Pediatrics  
 B.A. 1972 Northwestern University  
 M.D. 1977 University of Illinois

Roesser, James R. (1993) Assistant Professor  
 B.S. 1982 Rensselaer Polytechnic Institute  
 Ph.D. 1986 University of Virginia

Roth, Karl S.,\* Professor

Sato-Bigbee, Carmen (1997) Assistant Professor

Scarsdale, J. Neel (1988) Assistant Professor  
 B.S. 1982 University of Arkansas  
 Ph.D. 1989 Yale University

Schirch, LaVerne G. (1978) Professor  
 B.S. 1958 Bluffton College  
 Ph.D. 1963 University of Michigan

Shelton, Keith R. (1970) Professor  
 B.A. 1963 and Ph.D. 1968 University of Illinois

Snyder, Steven R.\* (1998) Assistant Professor

Van Antwerpen, Hendricus G. (1998) Assistant Professor  
 B.S. 1981 and M.S. 1984 University of Utrecht

Van Tuyle, Glenn Charles (1974) Associate Professor  
 A.B. 1965 Lafayette College  
 Ph.D. 1972 Thomas Jefferson University

Wolf, Barry\* (1978) Professor of Biochemistry and  
 Molecular Biophysics and Human Genetics  
 B.S. 1969, M.D. 1974 and Ph.D. 1974 University  
 of Illinois

Wright, H. Tonie (1980) Professor  
 A.B. 1963 Princeton University  
 Ph.D. 1968 University of California, San Diego

Zehner, Zendra E. (1983) Professor  
 B.A. 1969 Bradley University  
 M.S. 1972 University of Houston  
 Ph.D. 1979 Baylor University

#### Emeriti faculty

Abbott Jr., Lynn D., Professor Emeritus  
 B.S. 1936 and M.S. 1937 Wayne State University  
 Ph.D. 1940 University of Michigan

Brandt, Richard B., Professor Emeritus  
 B.S. 1956 Queens College  
 M.S. 1960 Brooklyn College  
 Ph.D. 1968 New York University

Collins, James M., Professor Emeritus

Freer, Richard J., Professor Emeritus  
 B.S. 1964 Marist College  
 Ph.D. 1969 Columbia University

Higgins, E. Stanle, Professor Emeritus  
 B.A. 1952 Alfred University  
 Ph.D. 1956 State University of New York, Syracuse

Rogers, Kenneth S., Associate Professor Emeritus

#### Affiliate faculty

Cochran, David Lee	Devries, George H.
Dominey, Raymond S.	Harris, Robert B.
Kini, R. Manjunatha	Knight, Regina M.
Miyatake, Tadashi	Muddiman, David*
Peter-Katalinic, Jasna	Taki, Takao

\* Joint or secondary appointment

### Department of Biostatistics

#### Walter H. Carter Jr.

Professor and Chair (1968)  
 B.S. 1963 University of Richmond  
 M.S. 1966 and Ph.D. 1968 Virginia Polytechnic  
 Institute and State University

Adera, Tilahun\* (1994) Assistant Professor of Biostatistics  
 and Preventive Medicine and Community Health  
 Ph.D. 1987 Oregon State University

Amir, Cyrus (1998) Assitant Professor

Bovbjerg, Viktor E.,\* Assistant Professor

Boyle, Russell M. (1975) Assistant Professor  
 B.A. 1972 Indiana University  
 M.A. 1975 University of Akron

Campbell, Eleanor D. (1959) Research Assistant

B.S. 1959 University of Richmond

M.S. 1975 Medical College of Virginia of Virginia  
Commonwealth University

Choi, Sung C. (1978) Professor

B.S. 1957 and M.A. 1960 University of Washington

Ph.D. 1966 University of California, Los Angeles

Elswick, Ronald K. (1988) Assistant Professor

B.S. 1981 Radford University

Ph.D. 1985 Medical College of Virginia of Virginia  
Commonwealth University

Gennings, Chris (1983) Associate Professor

B.A. 1982 University of Richmond

Ph.D. 1986 Medical College of Virginia of Virginia  
Commonwealth University

Kilpatrick Jr., S. James (1965) Professor

B.S. 1954, M.S. 1957 and Ph.D. 1960 Queens University  
of Belfast, United Kingdom

Ko, Daijin (1985) Associate Professor

B.S. 1974 and M.S. 1977 Yonsei University, Korea

M.S. 1982 and Ph.D. 1985 University of Washington

Lu, I-Li (1993) Assistant Professor

B.S. 1983 University of Wisconsin, LaCrosse

M.A. 1987 and Ph.D. 1991 University of Virginia

McClish, Donna K. (1988) Associate Professor

B.A. 1972 and M.A. 1973 University of Michigan

Ph.D. 1979 University of North Carolina, Chapel Hill

Penberthy, Lynne T., \* Assistant Professor

Ramakrishnan, Viswanathan, Associate Professor

Shaw, James E., \* Assistant Professor

Smith, Wally R., \* Associate Professor

Wolfe, Luke G.\* (1982) Instructor of Biostatistics and Surgery

B.A. 1980 Bridgewater College

M.S. 1982 Medical College of Virginia of Virginia  
Commonwealth University

#### **Emeriti faculty**

Keefe, William E., Associate Professor Emeritus

B.S. 1959 and M.S. 1964 Virginia Polytechnic Institute  
and State University

Ph.D. 1967 Medical College of Virginia

#### **Affiliate faculty**

Carchman, Richard

Chinchilli, Vernon M.

Flora, Roger E.

Kish Jr., Charles W.

Peace, Karl

\* Joint or secondary appointment

### **Department of Dermatology**

#### **Algin B. Garrett**

Associate Professor and Chair (1983)

B.S. 1974 Bucknell University

M.D. 1978 Pennsylvania State University

Nunley, Julia (1996) Instructor

B.S. 1979 Purdue University

M.D. 1983 Case Western Reserve University

Wallace, Michael L., \* Assistant Professor

#### **Emeriti faculty**

Blaylock, W. Kenneth, Professor Emeritus

B.S. 1953 King College

M.D. 1958 Medical College of Virginia

Rothberg, Simon, Professor Emeritus

B.S. 1948 Columbia University

M.S. and Ph.D. 1956 Georgetown University

#### **Clinical faculty**

Blanchard, Lawrence

Booth, Jerry C.

Camden, Sharon S.

Caravati, Charles M.

Corvette, Donna M.

Fohl, Richard B.

Gutierrez, Fabio E.\*

Hoover, Shelley K.

Hudgins, Earl M.

Jordan Jr., William

Kelly, L. Williams

Kitces, Eileen C.

Konerding, Hazle S.

McMullen, Francis

Patterson, James W.\*

Reams, B. Thomas

Scoggins, Robert B.

Young, Estelle I.

\* Joint appointment

### **Department of Emergency Medicine**

#### **Joseph P. Ornato**

Professor and Chair (1985)

A.B. 1965 and M.D. 1971 Boston University

Abd-Elfattah, Anwar S., \* Professor

Barbee, Robert Wayne, Assistant Professor

Bukovitz, Andrew I., Assistant Professor

Christiansen, Gregory M., Assistant Professor

Chuidian, Frances X., Assistant Professor

Cisek, James E., Associate Professor

Cuttino, Charles M. (1998) Assistant Professor

B.S. 1990 James Madison University

M.D. 1994 Virginia Commonwealth University

Dolan, Margaret A.\* (1993) Associate Professor of

Emergency Medicine and Pediatrics

B.S. 1970 College of Mount St. Joseph-on-the-Ohio

M.D. 1981 Case Western Reserve University

Evans, Timothy C., Assistant Professor

Feeser, Venkata R. (1998) Assistant Professor

B.S. 1989 Pennsylvania State University

M.D. 1994 George Washington University

Foster, Robin L.\* (1996) Assistant Professor of Emergency  
Medicine and Pediatrics

B.S. 1985 College of William and Mary

M.D. 1989 Medical College of Virginia of Virginia

Commonwealth University

Galaska, Piotr N., Assistant Professor

Gonzalez, Michael S., Assistant Professor

Gonzalez, Stephanie M., Assistant Professor

Honick, Dana L., Assistant Professor

Ivatury, Rao R., \* Professor

Klinker, Nora A. (1997) Assistant Professor

M.D. 1992 West Virginia University

Kontos, Michael C.\* (1991) Assistant Professor of Emergency  
Medicine, Internal Medicine and Cardiology

M.D. 1983 Medical College of Virginia of Virginia

Commonwealth University

Kuhn, Gloria J. (1998) Associate Professor

Ph.D. 1970 Midwestern University

Ph.D. 1997 Wayne State College

Liner, Steven R.\* (1993) Associate Professor of Emergency  
Medicine and Pediatrics

B.A. 1967 and M.S. 1972 Rutgers University

M.D. 1977 College of Medicine and Dentistry of New  
Jersey

Marks, Lee Malcolm (1996) Assistant Professor

B.S. 1976 Brown University

M.D. 1993 University of Cleveland

McKeith, James John (1996) Assistant Professor

B.S. 1984 University of California

M.D. 1992 Jefferson Medical School

Muniz, Antonio E., Assistant Professor

Nelson, David\*

Pandya, Paras K., Assistant Professor

Pittman, Roland N,\* Professor

Rose, Samurl Rutherford, Associate Professor

Savas, Jeannie F.\*

Smith, Tabathia, Assistant Professor

Tadler, Scott C., Assistant Professor

Ward, Kevin R. (1998) Assistant Professor

B.S. 1985 Louisiana College

M.D. 1989 Tulane University

Williams, Carlos A. (1998) Assistant Professor

#### **Clinical faculty**

Ahmad, Mobashar

Bouhaider, Doumit

Cherukuri, Karitha

Cohen, Gail

Dhindsa, Harinder

Dillon, Edward

Hogan, Angela\*

Lacey, Thomas Patrick

McLaughlin, Colleen

Overton, Jerry

Picone, Carlos

Reid, Renee

Shah, Mahendra

Valente, Albert

Whiting, Julia

Williams, Dean C.

Yeh Jr., Thomas

\* Joint or secondary appointment

### **Department of Family Practice**

#### **David W. Marsland**

Professor and Chair (1973)

A.B. 1963 Clark University

M.D. 1967 Union University

Bryan, Daphne L. (1995) Assistant Professor

B.S. 1986 Howard University

M.D. 1990 Medical College of Virginia of Virginia  
Commonwealth University

Burgett, Amy E. (1995) Assistant Professor

Diploma 1966 AOMH

B.S. 1981 St. Cloud State

Coleman, George C. (1993) Associate Professor

B.S. 1977 College of William and Mary

M.D. 1981 Medical College of Virginia of Virginia  
Commonwealth University

Crowder, Lina S. (1998) Associate Professor

B.A. 1982 University of Virginia

J.D. 1985 University of Richmond

- Gary, Judy S. (1992) Assistant Professor  
B.S. 1983 Virginia Commonwealth University  
M.Ed. 1989 University of Virginia
- Haheesy-Calhoun, Marian A., Assistant Professor
- Harris, James S. (1995) Associate Professor  
B.A. 1953 Hampden-Sydney College  
M.D. 1960 University of Virginia
- James, Vivien,\* Assistant Professor
- Jeter, Carolyn R. (1990) Assistant Professor  
B.S. 1984 Virginia Commonwealth University
- Kuzel, Anton J. (1990) Associate Professor  
B.S. 1977, M.D. 1981 and M.H.P.E. 1985 University of Illinois
- MacIntyre, Pamela (1993) Assistant Professor  
B.S.E.D. 1968 Wheelock College  
M.Ed. 1970 Boston University  
M.S. 1995 Virginia Commonwealth University
- McIwaine, Benjamin H. (1995) Associate Professor  
B.S. 1971 Hampden-Sydney College  
M.D. 1975 Medical College of Virginia of Virginia Commonwealth University
- Munson, Paul J. (1973) Professor  
B.A. 1965 Gordon College  
M.Ed. 1968 Salem State College  
Ed.D. 1970 University of Virginia
- Nelson, David, Assistant Professor
- Peel, Carolyn (1996) Assistant Professor  
B.S. 1988 College of William and Mary  
M.D. 1992 Medical College of Virginia of Virginia Commonwealth University
- Rosenbaum, Charles I. (1995) Associate Professor  
B.S. 1980 College of William and Mary  
M.D. 1984 Medical College of Virginia of Virginia Commonwealth University
- Rothemich, Stephen F. (1996) Associate Professor  
B.S. 1985 Lynchburg College  
M.D. 1989 Medical College of Virginia of Virginia Commonwealth University
- Spence, Steven N. (1995) Associate Professor  
B.A. 1973 and M.D. 1977 University of Virginia
- Ulmer, Deborah L. (1998) Associate Professor  
B.A. 1975 West Virginia Wesleyan College  
M.Ed. 1980 Virginia Commonwealth University
- Whitehurst-Cook, Michelle Y. (1993) Associate Professor  
B.S. 1975 College of William and Mary  
M.D. 1979 Medical College of Virginia of Virginia Commonwealth University
- Emeriti faculty**
- Mayo, Fitzhugh, Professor Emeritus  
B.S. 1947 Virginia Polytechnic Institute and State University  
M.D. 1955 Medical College of Virginia
- Mitchell Jr., George Stan, Clinical Professor Emeritus
- Wood, Maurice, Professor Emeritus  
M.B. 1945 and B.S. 1945 Durham University, United Kingdom
- Clinical faculty**
- Agee IV, Robert L. Aldhizer, Theodore G.  
Anderson, James C. Badillo, Leslie  
Barr, Mark Beaulieu, Lorraine  
Bennett, Robert M. Bethel, Sonya N.
- Bettinger, Cynthia  
Blackburn Jr., M. Lee  
Bradley, Joan  
Brown, David  
Burroughs, Susan H.  
Buston II, Jameson  
Callahan, David  
Carter Jr., William H.  
Caudill, Leroy  
Clark, Craig C.  
Cobaugh, Donn S.  
Cooper, Jason A.  
Dageforde, James R.  
Dappen, Alan W.  
Davis, Gina G.  
Day, Lenore  
Decker, Raymond G.  
Depret-Guillaume, Serge  
Desai, Parimal  
Eddy, Janet M.  
Etre, Mouline H.  
Evans, Robert B.  
Faunce III, Howard\*  
Felton, Harold W.  
Fierro, Anthony  
Fish Jr., James H.  
Forrester, J. Colin  
Frederick, L. Arnold\*  
Gettas, Nick J.  
Gokli, Anup J.  
Gordon, Randolph\*  
Gray, Brigid C.  
Gutierrez, Fabio E.\*  
Hagan, Christine  
Hawkins, Teresa M.  
Heatwole, Kenneth  
Hendricks-Matthews, Marybeth  
Hinson, C. Randolph  
Holmes, Gregory  
Horne, Wallace  
Hubach, Frederick W.  
Hundley, Willoughby  
Jenkins, James P.  
Johnson, Norris  
Johnson-Threat, Yvette  
Jones, Samuel M.  
Kaiser, Sherif Z.  
Katchinoff, Barry L.  
Keller, Kevin  
Kentigh, James W.  
Kiessling, Brenda  
King, John G.  
Kowalski, John P.  
Kraus, Shane  
Lambert, Brent  
Lawrence, Daniel C.  
Leblang, Steven S.  
Leming, Joseph  
Lewis III, Augustine W.  
Lowery, Walter P.  
Lustig, Michael Robert  
Macconnachie, Nancy
- Bittner, Anna  
Blake, Thomas D.  
Bradner, Melissa K.  
Bryant, James P.  
Buston, Beverley G.  
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### Division of General Medicine and Primary Care

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B.A. 1983 University of California, Santa Cruz  
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Gadiwalla, Seema A., Instructor

M.B.B.S. 1991 Dow Med-Karachi

Garg, Rajat, Assistant Professor

Gentili, Angela, Assistant Professor

Gianola, Katherine, Assistant Professor

Gill, Ranjodh Singh, Assistant Professor

Godschalk, Michael F., Associate Professor

Hillner, Bruce E. (1984) Associate Professor

B.A. 1975 Cornell University

M.A. 1984 Harvard University

M.D. 1979 University of Chicago

Huber, Elizabeth C. (1989) Assistant Professor

B.S. 1982 and M.D. 1986 University of North Carolina

Johnson, Betty Anne, Associate Professor

Kanamori, Cesar I., Instructor

Kavanagh, Julia C. (1996) Assistant Professor

Klein, Wendy S., Assistant Professor

B.S. 1985 Boston University

M.D. 1984 Case Western

Kuno, Helen L., Assistant Professor

Link, Kurt, Assistant Professor

McCardell, Kathleen A., Assistant Professor

McMurtry, Cynthia, Associate Professor

Meyers, Margaret Elizabeth (1991) Assistant Professor

B.S. 1982 University of North Carolina, Greensboro

M.S. 1987 Virginia Commonwealth University

Moore, Shelly S. (1995) Assistant Professor

M.S. 1994 Virginia Polytechnic Institute and State  
University

Mulligan, Thomas, Professor

O'Keefe, Elizabeth, Assistant Professor

B.A. 1974 Cambridge University

M.D. 1977 Oxford University

Panebianco, Deborah I., Assistant Professor

Perry, Robert P. (1979) Associate Professor and  
Associate Dean for Graduate Medical Education,  
School of Medicine

A.B. 1972 Harvard University

M.D. 1976 University of Rochester

Pinson, Andy G. (1992) Assistant Professor

B.S. 1983 Furman University

M.D. 1987 Medical University of South Carolina

Rao, T. Premasudha, Assistant Professor

Reddy, Sashidar N., Instructor

B.A. 1990 Austin College

M.D. 1994 University of Texas

Retchin, Sheldon M.

Roberson, Margaret

Rogers, Alfred H. (1992) Assistant Professor

B.S. 1985 Emory University

M.D. 1989 University of Tennessee

Rowe, Joy P. (1994) Assistant Professor

M.D. 1987 Medical College of Virginia of Virginia  
Commonwealth University

Samuels, Julie, Assistant Professor

Schmitt, James, Associate Professor

Schroeder, Diane L., Assistant Professor

Selby-Penczak, Rachel, Assistant Professor

Stuckey, Charles P., Assistant Professor

Thakral, Vibha, Instructor

Vannier, Theresa A. (1994) Instructor

M.D. 1991 State University of New York

Vuyyuru, Sujatha (1995) Instructor

Willett, Rita, Assistant Professor

Witherspoon, John M. (1977) Professor of Internal Medicine  
and Health Administration

A.B. 1962 and M.D. 1967 Duke University

M.P.H. 1977 Harvard University

Yusi-Lenn, Almira Udarbe, Instructor

#### Clinical faculty

Bruzzese, Vivian

Clarke, Mary E.

Kirby, Karen

### Division of Hematology/Oncology

#### Thomas J. Smith

Associate Professor and Division Head

Carr Jr., Marcus, Professor

Cragg, Louise H., Assistant Professor

Edwards, Richard W. (1987) Research Assistant

B.S. 1982 University of Iowa

B.S. 1975 Western Illinois University

Grant, Steven (1987) Professor

B.S. 1969 City College of New York

M.D. 1973 Mount Sinai School of Medicine

Hackney, Mary Helen (1992) Assistant Professor

B.S. 1979 University of North Carolina, Chapel Hill

M.S. 1982 University of North Carolina, Charlotte

M.D. 1988 East Carolina University

Krystal, Geoffrey W., Associate Professor

Lyckholm, Laurel J. (1995) Assistant Professor

Roberts, John D. (1993) Associate Professor

A.B. 1972 Harvard University

M.D. 1976 University of Pennsylvania

Seither, Richard L. (1984) Associate Professor

B.S. 1975 Florida Institute of Technology

M.S. 1979 and Ph.D. 1983 University of Missouri

Shaw, James E. (1994) Assistant Professor

M.D. 1985 University of California, Los Angeles

M.P.H. 1994 University of North Carolina, Chapel Hill

Smith, Wade K. (1975) Associate Professor

A.B. 1959 Oberlin College

M.D. 1963 Johns Hopkins University

Snyder, Steven R., Assistant Professor

Yanovich, Saul (1978) Professor

M.D. 1970 Javeriana University, Columbia

#### Emeritus faculty

Watson III, James G., Professor Emeritus

#### Clinical faculty

Blunk, Karen L.

Desch, Christopher

Gandhi, Yogesh

Marsh, John C.

Mitchell, R. Brian

### Division of Infectious Diseases

#### Gordon L. Archer

Professor of Internal Medicine and Head, Division of  
Infectious Diseases (1975)

B.A. 1965 Washington and Lee University

M.D. 1969 University of Virginia

Fisher, Evelyn J. (1992) Associate Professor

M.D. 1966 Wayne State University

Ingroff, Victoria E., Assistant Professor

Jacobson, Eric S., Professor

Kerker, Thomas M., Professor

Lavoie, Suzanne R. (1992) Associate Professor

B.S. 1982, B.S. 1982 and M.D. 1986 University of  
Massachusetts

Markowitz, Sheldon M. (1975) Professor

B.S. 1964 University of Richmond

M.D. 1968 and M.S. 1978 Medical College of Virginia of  
Virginia Commonwealth University

Monroe, Sara G. (1986) Associate Professor of Internal

Medicine and Infectious Diseases

B.A. 1971 New York University

M.D. 1980 Rush Medical College

Nixon, Daniel E., Assistant Professor

Orenstein, Robert, Assistant Professor

Wong, Edward S., Associate Professor

### Division of Nephrology

#### Anton C. Schoolwerth

Professor and Head, Division of Nephrology (1985)

A.B. 1963 Princeton University

M.D. 1967 Harvard Medical School

Digiovanni, Susan R. (1995) Assistant Professor

M.D. 1984 Medical College of Virginia of Virginia  
Commonwealth University

Gehr, Todd W. B. (1987) Associate Professor

B.S. 1977 and M.S. 1978 Purdue University

M.D. 1981 West Virginia University

King, Anne L. (1985) Assistant Professor

A.B. 1973 Bryn Mawr College

M.D. 1980 University of Pennsylvania

Kirschbaum, Barry B. (1977) Associate Professor

B.A. 1961 Columbia College

M.D. 1965 Washington University

Mogyorosi, Andras, Assistant Professor

Ripley, Elizabeth B. D. (1991) Assistant Professor

B.S. 1982 Meredith College

M.D. 1986 Medical College of Virginia of Virginia  
Commonwealth University

Vinnikova, Anna K., Assistant Professor

#### Clinical faculty

Drewnowska, Krystyna

Ogunremi, Ayodele O.

Pedro, Antonio

Silverman, Bruce A.

**Division of Pulmonary****Alpha A. Fowler**

Professor and Eminent Scholar and Head, Division of Pulmonary (1982)  
M.D. 1975 Medical College of Georgia

Bechard, D E. (1983) Associate Professor

Brath, Lisa K. (1993) Assistant Professor

B.S. 1984 Texas A & M University  
M.D. 1988 University of Texas, Dallas

Cooper, Kevin R. (1979) Professor

B.S. 1969 Boston College  
M.D. 1973 State University of New York

Fairman, R. Paul (1977) Professor

B.S. 1968 Johns Hopkins University  
M.D. 1972 University of Missouri

Ferro, Thomas J., Associate Professor

Fisher, Bernard J. (1982) Research Assistant

B.S. 1981 Virginia Polytechnic Institute and State University  
B.S. 1987 Virginia Commonwealth University

Glauser, Frederick, Professor

Moses, Leonard, Assistant Professor

Polatty, Rose Crystal (1983) Associate Professor

B.S. 1973 Emory University  
M.D. 1977 Medical College of Georgia

Sessler, Curtis N. (1985) Associate Professor

B.A. 1975 Miami University  
M.D. 1979 University of Cincinnati

**Clinical faculty**

Hamrick, III, Richard M. Rao, Venkatarama K.

**Division of Quality Health Care****Wally R. Smith**

Associate Professor and Division Head (1991)  
B.A. 1977 Harvard University  
M.D. 1981 University of Alabama

Cotter, John J. (1994) Instructor

B.A. 1971 Canisius College  
M.A. 1975 State University of New York, Buffalo

Edmond, Michael B. (1995) Assistant Professor

B.S. 1982 Fairmont State College  
M.D. 1986 West Virginia University  
M.P.H. 1991 University of Pittsburgh

Kaplowitz, Lisa G., Associate Professor

Penberthy, Lynne T., Assistant Professor

**Clinical faculty**

Franchi, Diane Poses, Roy M.

**Division of Rheumatology, Allergy and Immunology****Shaun J. Ruddy**

Professor and Eminent Scholar of Internal Medicine and Head (1974)  
B.A. 1956 and M.D. 1961 Yale University

Buckley, Lenore M. (1993) Associate Professor

A.B. 1973 Cornell University  
M.D. 1977 University of Rochester

Daffern, Pamela J., Assistant Professor

Illei, Gabor G., Assistant Professor

Moxley, George F. (1979) Associate Professor

B.A. 1972 Kansas State University  
M.D. 1976 Washington University

Mullinax, Perry Franklin (1963) Professor

B.A. 1951 Duke University  
M.D. 1955 Medical College of Virginia

Owen Jr., Duncan S. (1966) Professor and Eminent Scholar

B.S. 1957 and M.D. 1960 University of North Carolina, Chapel Hill

Ren, Shunlin (1988) Assistant Professor

M.D. 1979 and M.S. 1986 Shanghai University  
Ph.D. 1992 Medical College of Virginia of Virginia Commonwealth University

Roberts Jr., William N. (1986) Associate Professor

B.S. 1973 Duke University  
M.D. 1977 University of Virginia

Sanders, Karen M., Associate Professor

Schwartz, Lawrence B. (1983) Professor and Eminent Scholar

B.S. 1970 University of Illinois  
M.D. 1976 and Ph.D. 1976 Washington University

Wise, Christopher M. (1992) Associate Professor

B.S. 1973 and M.D. 1977 University of North Carolina, Chapel Hill

**Clinical faculty**

Hogan, Angela Johnson, Robert R.  
Maestrello, Steven Sheikh, Farrukh

**Division of Substance Abuse Medicine****Sidney H. Schnoll**

Professor of Internal Medicine and Psychiatry and Head (1987)  
B.S. 1964 Union College  
M.D. 1967 New Jersey College of Medicine  
Ph.D. 1976 Thomas Jefferson University

Amponsah, Akwasi A., Assistant Professor

Britt, Gena Covell (1993) Assistant Professor

B.A. 1989 Randolph-Macon College  
M.S. 1992 and Ph.D. 1993 Virginia Commonwealth University

Horvath, Paula K. (1982) Associate Professor

B.S. 1972, M.S. 1974 and Ph.D. 1977 Purdue University

Weaver, Michael F., Assistant Professor

**Clinical faculty**

Reiner, Scott M.

**Department of Legal Medicine****Marcello F. Fierro**

Professor, Department Head and Chair (1994)  
B.A. 1962 D'Youville College  
M.D. 1966 State University of New York, Buffalo

Ross, David L., \* Assistant Professor

Swisher, Karen N., \* Associate Professor

**Clinical faculty**

Brewbaker Jr., Robert S. Bush, Leah L. E.  
Crews, John W. Field, Frances P.

Hancock, Thomas F.

Kinnison, Elizabeth

Massello III, William

Rozovsky, Fay A.

Sartoris, Laurens

Valentour, James

Kay, Deborah

Majette, R. Shawn

Page III, Rosewell

Russell, Jack B.

Swisher, Karen N.

**Massey Cancer Center****Gordon Dean Ginder\***

Professor of Internal Medicine and Director (1997)  
B.S. 1971 University of Illinois  
M.D. 1975 Johns Hopkins University

Buzzard, I. Marilyn, \* Associate Professor

Cole, Eva A., Assistant Professor

Neier, Heather, Assistant Professor

Regelson, W., \* Professor

Seither, Richard, \* Assistant Professor

Smith, Thomas J., \* Associate Professor

Tombes, Robert M., \* Assistant Professor

Windle, Jolene J., \* Associate Professor

\* Joint or secondary appointment

**Department of Microbiology and Immunology****Dennis E. Ohman**

Professor of Microbiology and Immunology and Department Chair (1998)  
B.S. 1973 Michigan University  
Ph.D. 1980 Oregon Health Science

Adler, Stuart P., \* Professor and Division Head

Archer, Gordon L., \* Professor Division Head

Barbour, Suzanne E. (1993) Assistant Professor

B.S. 1983 Cook College

Ph.D. 1990 Johns Hopkins University

Bear, Harry D., \* Professor Division Head

Buck, Gregory A. (1984) Professor

B.S. 1975 University of Wisconsin

Ph.D. 1980 University of Washington

Cabral, Francine M. (1979) Professor

B.S. 1966 College of White Plains

M.S. 1968 Villanova University

Ph.D. 1974 University of Connecticut

Cabral, Guy Anthony (1978) Professor

B.S. 1967 University of Massachusetts

M.S. 1971 and Ph.D. 1974 University of Connecticut

Califano, Joseph, \* Assistant Professor

Carvalho, Maria Ruth C., Research Assistant

Christie, Gail Ellen (1984) Associate Professor

A.B. 1973 University of Chicago

Ph.D. 1978 Yale University

Conrad, Daniel H. (1989) Professor

B.S. 1970 and Ph.D. 1973 West Virginia University

Cornelissen, Cynthia N., Assistant Professor

Formica, Joseph V. (1969) Associate Professor

B.S. 1953 and M.S. 1954 Syracuse University

Ph.D. 1967 Georgetown University

Grant, Steven, \* Professor

Hard Jr., R. C., \* Associate Professor

Holmes, Walter M. (1977) Professor  
B.S. 1967 Memphis State University  
Ph.D. 1974 University of Tennessee

Hsu, Hsiu-Sheng (1964) Professor  
B.S. 1955 McGill University  
M.S. 1956 and Ph.D. 1959 University of Pennsylvania

Huff, Thomas F. (1985) Professor  
B.S. 1974 Clemson University  
Ph.D. 1980 University of Louisville

Hylemon, Phillip B. (1972) Professor  
B.S. 1967 Atlantic Christian College  
Ph.D. 1971 Virginia Polytechnic Institute and State University

Jacobson, Eric S., \* Professor  
Kauma, Scott W., \* Associate Professor  
Kitten, Todd, \* Assistant Professor  
Koertge, Thomas E., \* Associate Professor  
Kos, Ferdynand (1996) Assistant Professor  
M.S.C. 1981 Jagiellonian University  
Ph.D. 1992 Australian National

Krystal, Geoffrey W., \* Associate Professor  
Lebman, Deborah A. (1989) Assistant Professor  
B.A. 1974 Dickinson College  
M.S. 1979 Thomas Jefferson University  
Ph.D. 1987 University of Pennsylvania

Loria, Roger M. (1973) Professor  
B.S. 1964 Bar-Ilan University, Israel  
M.S. 1968 State University of New York  
Ph.D. 1972 Boston University

Macrina, Francis Louis\* (1974) Professor  
B.S. 1968 Cornell University  
Ph.D. 1972 Syracuse University

Marconi, Richard T. (1994) Assistant Professor  
B.S. 1983 William Paterson College  
Ph.D. 1988 University of Montana

Markowitz, Sheldon M., \* Professor  
McCoy, Kathleen L. (1988) Associate Professor  
B.S. 1976 St. John Fisher College  
M.S. 1979 and Ph.D. 1983 University of Washington

McVoy, Michael, \* Assistant Professor  
Mikkelsen, Ross, \* Professor  
Munro, Cindy L., \* Assistant Professor  
O'Neal, Charles H. (1968) Associate Professor  
B.S. 1957 Georgia Institute of Technology  
Ph.D. 1963 Emory University

Poklis, Alphonse, \* Professor  
Povirk, Lawrence F., \* Professor  
Qin, Dahui, Assistant Professor  
Regelson, W., \* Professor  
Ruddy, Shaun J., \* Professor Division Head  
Ryan, John J., \* Assistant Professor  
Schenkein, Harvey A., \*  
Schwartz, Lawrence B., \* Professor  
Taylor, Shirley M. (1993) Assistant Professor  
B.S. 1974 University of Capetown, South Africa  
B.S. 1976 and M.S. 1977 University of Stellenbosch, South Africa  
Ph.D. 1981 University of Southern California

Tew, John G. (1972) Professor and Interim Chair  
B.S. 1966, M.S. 1967 and Ph.D. 1970 Brigham Young University

Valerie, C. Kristoffer, \* Associate Professor

Weymouth, Lisa A., \* Assistant Professor  
Wu, Jihua, Research Assistant  
Xu, Ping, Assistant Professor  
Yager, Dorne, \* Assistant Professor

#### Emeriti faculty

Bradley, S. Gaylen, Professor Emeritus  
B.A. 1950 and B.S. 1950 State University of Southwest Missouri  
M.S. 1952 and Ph.D. 1954 Northwestern University

Coleman, Philip H., Professor Emeritus  
D.V.M. 1956 University of Georgia  
M.S. 1959 and Ph.D. 1959 University of Wisconsin

Shadomy, H. Jean, Professor Emerita  
B.A. 1956, M.A. 1958 and Ph.D. 1963 University of California, Los Angeles

Welshimer, Herbert J., Professor Emeritus  
B.S. 1943 and Ph.D. 1947 Ohio State University

#### Affiliate faculty

Burton, Gregory F.	Carlson, Patricia L.
Fischer-Stenger, Krista	Pettit, Denise A.
Tinnell, Wayne H.	Toney, Denise M.
Westin, Eric	Whiteman, Leslie
Zwierzynski, Tadeusz A.	

\* Joint or secondary appointment

### Department of Neurology

#### Robert J. DeLorenzo

Professor and Chair (1985)  
B.S. 1969, M.D. 1973, M.P.H. 1973 and Ph.D. 1972  
Yale University

Astruc, Juan, \* Professor  
Churn, Severn B. (1994) Assistant Professor  
B.S. 1984 College of William and Mary  
M.S. 1986 University of Richmond  
Ph.D. 1991 Virginia Commonwealth University

Costanzo, Richard M., \* Professor  
Garnett, William R., \* Professor  
MacLaughlin, Susan B. (1986) Assistant Professor  
B.S. 1966 Mary Washington College  
M.Ed. 1970 College of William and Mary  
M.H.A. 1983 Medical College of Virginia of Virginia Commonwealth University

Sombati, Sompong (1987) Assistant Professor  
B.A. 1973 University of Kansas  
M.S. 1977 Mahidol University, Thailand  
Ph.D. 1983 University of Oregon

Williams, Carlos, Assistant Professor

#### Emeriti faculty

Harbison, John William, Professor Emeritus  
B.A. 1959 and M.D. 1962 University of Iowa

#### Clinical faculty

Bragg, Winifred D.	Brush, John J.
Cohen, Robert J.	Doss, III, William L.
Hansen, Robert B.	Harrelson, Austin B.
Harris, J. Kim	Harris Jr., William O.

Hennessey IV, John J.	Isaacs, Edward R.
Kirk Jr., Vernon H.	Mcgee, Francis
O'bannon, John	Paschall, Robert M.
Rennie, Laurie E.	Richards, Nelson G.
Simbra, Maria	Slattery, Michael R.
Sonberg, Arthur R.	Spain, Edward H.
Tetalman, Bruce I.	Vasconcelos, Olavo
Waldman, Carl	

### Division of Child Neurology

#### John M. Pellock

Professor and Division Head (1965)  
B.A. Johns Hopkins University  
M.S. Fairleigh Dickinson University  
M.D. St. Louis University

Morton, Lawrence, Assistant Professor  
Myer, Edwin C. (1973) Professor  
M.B.Ch.B. 1956 University of Witwatersrand, Union of South Africa

Shapiro, Steven M. (1988) Associate Professor  
B.S. 1971 Syracuse University  
M.D. 1975 University of Pittsburgh

### Division of Neuro-ophthalmology

#### Warren L. Felton III\*

Associate Professor and Division Head (1985)  
B.A. 1973 and M.D. 1980 University of Oklahoma

### Division of Neurophysiology

Bell, Zakia D., Assistant Professor  
Corrie, W. Stephen (1987) Associate Professor  
B.A. 1962 Reed College  
M.D. 1966 Washington University

Leshner, Robert T. (1980) Professor  
A.B. 1965 and M.D. 1969 Cornell University

Towne, Alan R. (1986) Associate Professor  
B.A. 1970 Hobart College  
M.D. 1981 University of Aix-Marseille, France

Waterhouse, Elizabeth J. (1994) Assistant Professor  
M.D. 1988 Harvard University

### Department of Obstetrics and Gynecology

#### John W. Seeds

Professor and Department Chair (1994)  
B.S. 1968 University of Washington  
M.D. 1972 University of Virginia

Al-Mateen, Kevin Baker, \* Assistant Professor  
Bodurtha, Joann N., \* Associate Professor  
Borzelleca Jr., Joseph F. (1991) Assistant Professor  
B.A. 1977 University of Virginia  
M.D. 1981 Medical College of Virginia of Virginia Commonwealth University

Brennan, Margaret M., Assistant Professor  
Brock, Ellen L. (1992) Associate Professor  
B.S. 1977 University of South Carolina  
M.D. 1981 Medical University of South Carolina

Cohen, Stephen A. (1994) Associate Professor  
B.S. 1971 Old Dominion University  
M.D. 1975 Medical College of Virginia of Virginia  
Commonwealth University

Dinsmoor, Mara J. (1989) Associate Professor  
A.B. 1978 Dartmouth College  
M.D. 1982 Indiana University

Gill, Edward J. (1995) Assistant Professor  
B.A. 1982 College of Holy Christ  
M.D. 1986 Tufts University

Girerd, Philippe H. (1992) Assistant Professor  
B.A. 1979 Rutgers University  
M.D. 1983 University of Medicine and Dentistry of  
New Jersey

Gutcher, Gary R., \* Professor

Hardigan, Eileen O. (1995) Assistant Professor  
B.S. 1968 Trinity College

Hurt, Waverly Glenn (1968) Professor  
B.S. 1960 Hampden-Sydney College  
M.D. 1964 Medical College of Virginia

Jackson-Cook, Colleen K., \* Assistant Professor

Kauma, Scott W. (1988) Associate Professor  
B.A. 1978 Lawrence University  
M.D. 1982 University of Wisconsin

Kerkering, Kathryn W., \* Associate Professor

Klein, Wendy S., \* Assistant Professor

Kornstein, Susan G., \* Assistant Professor

Lanni, Susan M., Assistant Professor

Nestler, John, \* Professor

Peng, Thomas C. (1989) Associate Professor  
B.A. 1976 Johns Hopkins University  
M.D. 1980 University of Connecticut

Pierce, John (1999) Assistant Professor

Richards-Bullock, Amanda (1992) Associate Professor  
M.B.Ch.B. 1976 Captown University  
M.R.C.O. 1982 Royal College of Surgeons of Edinburgh

Rozycki, Henry J., \* Associate Professor

Segreti, Eileen M. (1994) Assistant Professor  
M.D. 1988 Duke University

Stovall, Dale W., Associate Professor

Takacs, Peter, Research Associate

Vandermolen, David T. (1993) Assistant Professor  
B.S. 1986 Oregon State University  
M.D. 1986 University of Texas

Walsh, Scott W. (1990) Professor  
B.S. 1970, M.S. 1972 and Ph.D. 1975 University of  
Wisconsin

Wheelock, John B., Associate Professor

Wyman, Jean F. \*

#### **Emeriti faculty**

Board, John A., Professor Emeritus  
B.S. 1953 Randolph-Macon College  
M.D. 1955 Medical College of Virginia

Collins, Judith B., Associate Professor Emerita

Dunn, Leo J., Professor Emeritus  
B.A. 1952 Hofstra University  
M.D. 1956 Columbia University

Goplerud, Dean R., Professor Emeritus  
B.A. 1951 St. Olaf College  
M.D. 1955 State University of Iowa

Hoge, Randolph H., Professor Emeritus  
B.S. 1924 University of Virginia  
M.D. 1928 Harvard University

#### **Clinical faculty**

Adkins, William E.

Blanton, Erika H.

Buettner, Karin L.

Cornell, George W.

Eads, A. Stephen

Feore, J. Coleman

Frederici, Benigno D.

Geddes, Norma

Gianfortoni, Joseph G.

Gutlihr, Jo Anne

Hermansen, Marcus C.

Hosseinzadah, Minoos

Johnson, Bruce E.

Jones, Paul A.

Levin, Beth E.

Macivor, Duncan C.

Mann Jr., William Joseph

Matt, Dennis

Minor, Philip L.

Moore, Gregory P.

Nirmul, Jasodera

Olenik, Lisa

Paul, Kristin L.

Rabhan, Nathan H.

Rosenberg, Sanford

Royal, Harry W.

Sayegh, Sue Kelly

Shaughnessy, Katherine

Stout, Kathryn E.

Tate, Alexandra

Thomas III, Pendleton E.

Torres, Emilio B.

Wisgirda, Jean

Zimberg, Stephen E.

Battista, Joseph V.

Bruder, Karen L.

Christmas, James T.

Debra, Kwasi A.

Edelstein, Michael C.

Festa, Laura

Fugger, Edward F.

Gentile, Frank

Goodman, Floyd Keith

Hamilton, Stuart H.

Hirata, Alice J.

Jarrell, Shelby E.

Jones, James E.

Knapp, Karen

Lucas, Jerry A.

Maizels, Max Sam

Maraist, Adrienne L.

Mcghee, Pamela Hall

Montague, David L.

Mucciola, Robert N.

O'connell, Nan G.

Oredein, Olugbenga

Petres, Robert E.

Rinehardt, Richard

Rowe, Bruce C.

Sawyer, Mary Jo

Schoeffler, Edmund

Steingold, Kenneth

Suarez, Kathryn R.

Thedieck, Charles

Tidey, George F.

Wilbanks, Peter

Zedler, Peter A.

\* Joint or secondary appointment

### **Department of Ophthalmology**

#### **Robert C. Allen**

Professor and Chair (1994)  
M.D. 1975 University of Virginia

Benson, William H. (1992) Assistant Professor  
B.A. 1982 Northwestern University  
M.D. 1986 West Virginia University

Carney, Marcia D. (1987) Associate Professor  
B.A. 1973 Wellesley College  
M.D. 1977 Cornell University

Felton, Warren L., \* Associate Professor

Miller, Amy (1996) Instructor  
B.S. 1987 and O.D. 1989 Indiana University

Miller, Eydie G., Associate Professor

Wright, John D. (1996) Associate Professor  
B.A. 1968 and M.D. 1972 Yale University

#### **Emeriti faculty**

Guerry III, DuPont, Professor Emeritus  
B.S. 1934 Furman University  
M.D. 1938 University of Virginia  
D.Med.Sc. 1944 Columbia University

Nooney Jr., Thomas W., Professor Emeritus  
B.A. 1942 Trinity College  
B.S. 1948 and O.D. 1949 Los Angeles College of  
Ophthalmology  
M.S. 1961 University of Rochester  
Ph.D. 1970 Medical College of Virginia of Virginia  
Commonwealth University

Wiesinger, Herbert, Professor Emeritus

#### **Clinical faculty**

Blair, Charles J.

Bullock Jr., J. Paul

Caldwell, John B. H.

Cooper, Geoffrey G.

Ferguson Jr., James G.

Heyner, Gregory J.

King Jr., Robert

Lipstock, Kenneth

Mandell, Barry

McNeer, Paul R.

Mullen Jr., Perry Wesley

Sakowski Jr., Anthony D.

Smith, Lindley T.

Volk, Stephan

Wortham, V. Edwin

Brown, James L.

Bundy III, Walter E.

Combs, James L.

Ebert, Eleanore M.

Guerry, R. Kennon

Jacey, Robert W.

Leroux, David

Macmillan, David

Mcneer, Keith W.

Morgan III, W. E.

Peay Jr., Clifton

Sanborn, George E.

Stratford, Thomas P.

Wagner, Alan

Zuravleff, Jeffrey John

\* Joint or secondary appointment

### **Department of Orthopaedic Surgery**

#### **John A. Cardea**

Professor and Department Chair (1973)  
M.D. 1966 West Virginia University

Adelaar, Robert S. (1976) Professor  
B.S. 1966 and B.A. 1967 Lehigh University  
M.D. 1970 University of Pennsylvania

Carr, James B. (1989) Associate Professor  
B.S. 1976 Colorado State University  
M.D. 1980 Northwestern University

Disler, David G., \* Associate Professor

Foster, William C., Associate Professor

Loughran, Thomas P. (1983) Associate Professor  
B.S. 1973 College of William and Mary  
M.D. 1977 Medical College of Virginia of Virginia  
Commonwealth University

Nogi, Jay (1979) Associate Professor  
A.B. 1968 University of Rochester  
M.D. 1971 Jefferson Medical College

Patterson, Ronald H. (1990) Assistant Professor  
B.S. 1965 Wake Forest University  
B.S. 1966 North Carolina State University  
M.D. 1971 Medical College of Virginia of Virginia  
Commonwealth University

Zuelzer, Wilhelm A. (1990) Associate Professor  
M.D. 1971 and M.S. 1988 University of Texas

**Clinical faculty**

Atkins, Susan	Bowers, William H.
Caspari, Richard B.	Desai, Sanjay J.
Dimartino, Paul	Glowacki, Keith
Henceroth, William	Irby Jr., E. Clairborne
James, Charles M.	Leibovic, Stephen
Mathews, Hallett H.	Mcdermott, Paul
Mcdowell, Charles	Meyers, John F.
Muron, David John	Nachman, Herman
Nordt III, William E.	Sharps, Chester
Urquia, David Craig	Wilson, Jeffrey K.
Worland, Richard L.	Young, D. Christopher
Zaslav, Kenneth Robert	

\* Joint appointment

**Department of Otolaryngology****Aristides Sismanis**

Professor and Department Chair (1980)  
M.D. 1973 University of Athens, Greece

Ali, M. Karim, Associate Professor  
Costanzo, Richard M.,\* Professor  
Dinardo, Laurence J. (1991) Assistant Professor  
B.A. 1982 Middlebury College  
M.A. 1986 Stanford University  
Frable, Mary A. (1967) Professor  
B.A. 1955 Oberlin College  
M.D. 1959 Northwestern University  
Gleason, Ann T.,\* Instructor  
Hasenstab, Mary S.\* (1986) Professor  
B.S. 1963, M.Ed. 1968 and Ph.D. 1975 Kent State University  
Kastetter, Sean K.,\* Instructor  
Kazanoglu, Altug,\* Associate Professor  
King, Michael D. (1979) Associate Professor  
B.S. 1966 Central State University  
M.S. 1969 Phillips University  
Ph.D. 1976 University of Oklahoma  
Laine, Fred J.,\* Associate Professor  
Powers, Celeste N.,\* Professor  
Reiter, Evan R., Assistant Professor  
Smoker, Wendy R. K.,\* Professor  
Spencer, Robert F.,\* Professor  
Stevens, Ann G.,\* Instructor  
Wohl, Daniel L. (1991) Assistant Professor  
B.S. 1978 Muhlenberg College  
M.D. 1985 Medical College of Pennsylvania

**Emeriti faculty**

Cutler, S. James, Professor Emeritus  
B.S. 1941 Temple University  
M.S. 1958 College of William and Mary  
Flowers, Ann N., Associate Professor Emerita  
B.S. 1943 Minnesota State College, Bemidja  
M.S. 1949 University of Wisconsin  
Ed.D. 1965 University of Virginia  
Smith, Maynard P., Clinical Professor Emeritus  
B.S. 1934 Randolph-Macon College  
M.D. 1938 University of Virginia

Williams, George H., Professor Emeritus  
B.S. 1952 and M.D. 1956 Tulane University

**Clinical faculty**

Balance, John	Beach, Woodford
Cross, David	Fowler, Bridgette
Giordano, Anthony	Godin, Michael S.
Hamid Jr., Mohamed	Hayden, G. Douglas
Helindonis, Emmanue	Hickman, Clifton C.
Jones, Erika	Leeman, Daniel J.
Miwa, Takiki	Powell, Jeffery
Shaia, Fred T.	Shim, Jaimoon M.
Stamm, Michael A.	Svoboda, Kimberly

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B.S. 1967 Virginia Military Institute  
Ph.D. 1971 University of Wisconsin, Madison  
M.D. 1978 University of Miami

Abbey, Louis M.,\* Associate Professor  
Blount, Melissa, Assistant Professor  
Burns, James C.,\* Associate Professor  
Carr, Marcus,\* Associate Professor  
Casterline, Jeffrey (1999) Assistant Professor  
Coudron, Philip E., Assistant Professor  
Freude, Kenneth A., Assistant Professor  
Holt, Shawn E., Assistant Professor  
Jackson-Cook, Colleen,\* Assistant Professor  
Kaugars, George E.,\* Professor  
Lippman, H. Robert, Associate Professor  
Mohanty, Laxmi B., Associate Professor  
Page, Dennis G.,\* Associate Professor  
Pandya, Arti,\* Assistant Professor  
Powers, Celeste N., Professor  
Robinson, Susan E.,\* Professor  
Schwartz, Lawrence B.,\* Professor  
Svirsky, John A.,\* Associate Professor  
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**Emeriti faculty**

Allison, Marvin J., Professor Emeritus  
B.A. 1942 College of William and Mary  
M.A. 1947 and Ph.D. 1960 University of Pennsylvania  
Dalton, Harry P., Professor Emeritus  
Gander, G. William, Professor Emeritus  
B.S. 1953 Montana State College  
M.S. 1955 and Ph.D. 1959 Cornell University  
Hench, Miles E., Professor Emeritus  
B.S. 1941 Lawrence University  
M.S. 1949 and Ph.D. 1952 University of Michigan  
Kay, Saul, Professor Emeritus  
B.A. 1936 New York University  
M.D. 1939 New York Medical College  
Lurie, Harry I., Professor Emeritus  
B.S. 1932 and M.B.Ch.B. 1936 University of the Witwatersrand, South Africa

Nakoneczna, Irene, Associate Professor Emerita  
M.D. 1949 Albert-Ludwigs University, Germany  
Rosenblum, William I., Professor Emeritus  
B.A. 1957 Swarthmore College  
M.D. 1961 New York University  
Vennart, George P., Professor Emeritus  
A.B. 1948 Wesleyan University  
M.D. 1953 University of Rochester  
Young, Nelson F., Professor Emeritus  
B.S. 1935 University of Washington  
Ph.D. 1945 New York University

**Clinical faculty**

Armstrong, Carl W.	Beck, Ralph E.
Blaine, James W.	Briere, Russell O.
Buddington, Richard S.	Carpenter, Richard H.
Carroll, George J.	Cook, Sallie
Deblois, Georgean G.	Dunn, Harold P.
Gutierrez, Fabio E.	Hershberg, Robert A.
Hoke Jr., Harry F.	Hossaini, Ali A.
Kay, Deborah*	Klimock, Gregory
Mcgehee Jr., Read*	Mcmullen, Francis*
Patterson, James W.	Pierce, Catherine
Pinto, Carlos	Saady, Joseph
Thomas, Carolyn E.	Thomas, George W.
Thornton, John L.	

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**Division of Anatomical Pathology**

Blount, Melissa, Assistant Professor  
Gerszten, Enrique (1962) Professor  
C.P.A. 1951 and M.D. 1958 University of Buenos Aires, Argentina  
Hard Jr., Richard C. (1966) Associate Professor  
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M.D. 1958 St. Louis University

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M.B.B.S. 1957 University of Calcutta, India

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Gerszten, Enrique, Professor  
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Hard Jr., R. C., Associate Professor

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B.S. 1969 and B.S. 1969 Massachusetts Institute of Technology  
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Ph.D. 1988 Medical College of Virginia of Virginia Commonwealth University  
 Becker, Joanne L. (1995) Assistant Professor  
 M.D. 1989 Northeastern Ohio University  
 Ben-Ezra, Jonathan (1991) Associate Professor  
 B.A. 1979 and M.D. 1979 Boston University  
 Miller, Greg (1977) Professor  
 Ph.D. 1973 University of Arizona  
 Poklis, Alphonse (1987) Professor  
 B.S. 1969 and Ph.D. 1974 University of Maryland  
 Riley, Roger S., Associate Professor  
 Weymouth, Lisa A. (1993) Assistant Professor  
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#### Clinical faculty

Jesse, Janice K.

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#### Alphonse E. Sirica

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 Ware, Joy Laurin (1987) Professor  
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### Division of Molecular Diagnostics

#### Carleton T. Garrett

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 A.B. 1962 Lehigh University  
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 Ph.D. 1977 University of Wisconsin

Elmore, Lynne, Research Associate  
 Ferreira-Gonzalez, Andrea (1994) Assistant Professor  
 M.S. 1985 National University of Cordob  
 Ph.D. 1994 George Washington University

### Division of Surgical Pathology and Cytopathology

#### William J. Frable

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 B.S. 1956 and M.D. 1959 Northwestern University

Burks, Robert Tucker (1994) Assistant Professor  
 M.D. 1987 University of South Carolina  
 Contos, Melissa J. (1988) Assistant Professor  
 M.D. 1988 Medical College of Virginia of Virginia Commonwealth University  
 Grimes, Margaret M. (1990) Associate Professor  
 B.A. 1971 Rosemont College  
 M.D. 1975 New York Medical College  
 Kornstein, Michael J. (1986) Associate Professor  
 B.A. 1977 Cornell University  
 M.D. 1980 State University of New York

Mills, A. Scott (1981) Associate Professor  
 B.S. 1973 University of Georgia  
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 Powers, Celeste N., Professor  
 Wallace, Michael L., Assistant Professor

### Department of Pediatrics

#### Joseph H. Laver

Professor and Chair

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 Bagwell, Charles E., \* Professor and Division Head  
 Bodurtha, Joann N., \* Associate Professor  
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 Dudley, Barbara (1996) Instructor  
 B.S.N. 1982 University of South Alabama  
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 Ellison, Jay W., Assistant Professor  
 Fisher, Robert A., \* Associate Professor  
 Haynes, Jeffrey H., \* Assistant Professor  
 Hingsbergen, Elizabeth A., \* Assistant Professor  
 Krieg, Richard J., \* Professor  
 Lavoie, Suzanne, \* Assistant Professor  
 Mascia, Christopher C., Instructor  
 Morton, Lawrence, \* Assistant Professor  
 Muniz, Antonio E., \* Assistant Professor  
 Nance, Walter E., \* Professor and Department Head  
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 Norris, Wilma D. (1969) Instructor  
 A.A. 1960 Lees-McRae Juni  
 Orelve, Fred, \* Professor  
 Pandya, Arti, \* Assistant Professor  
 Parmelee, Dean X., \* Associate Professor and Division Head  
 Shapiro, Jay H., \* Associate Professor  
 Shapiro, Steven, \* Associate Professor  
 Singh, Nirbhay N., \* Professor  
 Sonenklar, Neil, \* Associate Professor  
 Spottswood, Stephanie E., \* Assistant Professor  
 Wohl, Daniel L., \* Assistant Professor  
 Wolf, Barry, \* Professor  
 Wood, Isaac, \* Associate Professor  
 Wright Jr., John D., \* Associate Professor

#### Emeriti faculty

Young, Ruben B., Professor Emeritus

#### Clinical faculty

Abbott, Katherine  
 Ailsworth, Melody  
 Allison-Bryan, Barbara  
 Archuleta, Bob  
 Arnold, Gayle G.  
 Blumberg, Michael Z.  
 Boisseau, Sandra  
 Brennan, James F.  
 Campbell, Margaret R.  
 Christian, Lora G.  
 Curry, William L.  
 Davidow, Daniel N.  
 Deal, Tracey C.  
 Abernathy, Ted R.  
 Albrecht, G. Thomas  
 Andracko, John D.  
 Arkin, David L.  
 Bell, Sandra A.  
 Boatwright III, J. W.  
 Bones, J. Thomas  
 Bright, George M.  
 Carr, William M.  
 Colley, Amelia H.  
 David, Ronald B.  
 Dawson, Philip A. J.  
 Dewitt, Gerald

Dwyer, James H.  
 Fishburne, Harriette B.  
 Gewanter, Harry L.  
 Grant, Elton  
 Gunther, Robert C.  
 Hanzel, Jeffrey S.  
 Herman, Bernard D.  
 Jaffe, Michael  
 Johnson, Lindsey A.  
 Kellett, Gordon N.  
 Kirchmier, Stanley  
 Kraft, Colleen  
 Kuperminc, Denise C.  
 Lee, Richard M.  
 Lovings, Vicki  
 Massie, F. Stanford  
 Member, Bernard  
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 O'Neil, Timothy  
 Pastore, Dominick  
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 Prescott, Georgia  
 Radcliffe, Jessica J.  
 Ransone, Karen A.  
 Reams, Patricia  
 Robinson III, Grover  
 Sakhadeo, Shirhari S.  
 Saunders, Martha K.  
 Schweiker, Mary M.  
 Shreve, J. Mark  
 Smith, Gayle  
 Sprinkle, Whitney  
 Sussdorf, Claudia E.  
 Terry, Charles V.  
 Weaver, Julie  
 West, Bruce S.  
 Wiley III, E. James  
 Wilkerson, Vivian M.  
 Witt, Mary F.  
 Yucha, Kim Peeler  
 Fidler, Robert Y.  
 Flanzenbaum, Mark  
 Gilliam, Kari L.  
 Grossberg, Judith  
 Gurney, Patricia L.  
 Harrison, Mary Ellett  
 Heywood, James  
 Jaworski, Margie L.  
 Kahler, Barbara  
 Kessel, Ann T.  
 Klaas, J. Richard  
 Kuhn, Janice G.  
 Lee, Clifton C.  
 Libby, Russell C.  
 Mahoney, Rhoda Leigh  
 Megson, Mary H. N.  
 Meyer, Marilyn A.  
 Mollen, Edward L.  
 Noble, Robert E.  
 Overton, Thomas P.  
 Phillips, Frederic  
 Powell, Clydette  
 Prince, Paul E.  
 Rahal, Frederick H.  
 Realubit, Jocelyn  
 Reardon, Patrick  
 Rodriguez, Gilberto E.  
 Sanders, Jeanne K.  
 Schulman, Joseph  
 Shayne, Robert S.  
 Silver, Dana Lise  
 Solomon, Stuart  
 Stephens, Elizabeth  
 Terrebonne, Mae Ellen  
 Tyson, Deidre Leigh  
 Wells, James M.  
 Whitaker, Joyce L.  
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 Williams, Ted  
 Wright III, Melville G.

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#### Richard R. Brookman

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#### Anne-Marie Irani

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 B.S. 1974 and M.D. 1978 American University of Beirut, Lebanon

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Clinical Instructor and Chair

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B.S. 1968 Manhattan College  
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M.B.B.S. 1982 Madurai University, India  
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M.D. 1977 Howard University

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Berman, Wallace F. (1977) Professor  
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Graham, Martin F. (1980) Professor  
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Connelly, Kevin P. (1995) Assistant Professor  
D.O. 1989 University of New England  
Dolan, Margaret A. (1993) Associate Professor  
B.S. 1970 College of Mount St. Joseph-on-the-Ohio  
M.D. 1981 Case Western Reserve University  
Draper, David A. (1964) Professor of Pediatrics and Pathology  
M.D. 1958 Queens University  
Lewis-Blackwell, Robbie L. (1999) Assistant Professor  
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B.A. 1977 Drew University  
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Derco, Keith A. Dudley, Clarissa

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A.B. 1963 University of Rochester  
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Kaplowitz, Paul B. (1982) Associate Professor  
B.S. 1970 University of Michigan  
Ph.D. 1975 and M.D. 1976 University of Chicago

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B.S. 1966 Wake Forest University  
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Dunn, Nancy L. (1979) Associate Professor  
B.A. 1969 Western Reserve University  
M.D. 1973 State University of New York, Buffalo  
Grossman, Neil J., (1998) Professor and Director of Sickle  
Cell Program  
B.A. 1973 and M.D. 1976 Boston University  
Massey, Gita V. (1987) Associate Professor  
B.S. 1977 College of William and Mary  
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B.A. 1968 and M.D. 1971 Johns Hopkins University

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Manganello, Anne-Marie A. (1987) Research Assistant  
B.S.N. 1982 Medical College of Virginia of Virginia  
Commonwealth University  
McVoy, Michael (1984) Assistant Professor  
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B.A. 1966 Stanford University  
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Ahmad, Magdy A., Assistant Professor  
Al-Mateen, Kevin Bakeer (1992) Assistant Professor  
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Kerker, Kathryn W. (1979) Associate Professor  
B.S. 1970 Duke University  
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Mainali, Elsie, Assistant Professor  
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**Division of Nephrology****James C. Chan**

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**Division of Pediatric Cardiology****Richard M. Schieken**

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B.A. 1961 La Salle College  
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Donofrio, Mary T. (1995) Assistant Professor  
Gullquist, Scott D. (1993) Assistant Professor  
B.A. 1982 Vanderbilt University  
M.S. 1983 and M.D. 1987 Georgetown University  
Moskowitz, William B. (1984) Associate Professor  
B.S. 1975 Florida Technological University  
M.D. 1978 University of South Florida  
Robertson, Louise W. (1965) Associate Professor  
B.S. 1956 Mary Washington College  
M.D. 1960 Medical College of Virginia

**Clinical faculty**

Williams, Richard V.

**Division of Pediatric Pulmonology****Gregory R. Elliott**

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B.S. 1973 Harding College  
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A.B. 1965 and Ph.D. 1974 University of North Carolina,  
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Abd-Elfattah, Anwar S.\*  
Aceto, Mario D. (1973) Professor  
B.S. 1953 Providence College  
M.S. 1956 University of Maryland  
Ph.D. 1959 University of Connecticut  
Allen, Robert C.,\* Professor  
Balster, Robert L. (1973) Professor  
B.S. 1966 University of Minnesota  
Ph.D. 1970 University of Houston  
Beardsley, Patrick M. (1993) Associate Professor  
B.A. 1974 and Ph.D. 1982 University of Minnesota  
Bowman, Edward R. (1981) Research Associate  
Ph.D. 1963 Medical College of Virginia  
Bridgen, David T., Research Assistant  
Damaj, M. Imad (1991) Assistant Professor  
B.S. 1985 St. Joseph University  
Ph.D. 1991 University of Paris  
Dance, Mario E. (1995) Research Associate  
B.S. 1986 Virginia Polytechnic Institute and State  
University  
1990 Virginia/Maryland Regional College of Veterinary  
Medicine  
Delorenzo, Robert John,\* Professor Department Head  
Dent, Paul,\* Assistant Professor  
Devane, William, Assistant Professor  
Dewey, William L.,\* Professor

- Ellis Jr., Earl F. (1977) Professor  
B.S. 1968 Oklahoma State University  
Ph.D. 1974 Bowman Gray School of Medicine
- Gao, Bin (1993) Assistant Professor  
M.D. 1986 Bethune University  
Ph.D. 1989 Medical College of China
- Gewirtz, David A. (1981) Associate Professor of  
Pharmacology and Toxicology and Internal Medicine  
B.S. 1970 Brooklyn College  
Ph.D. 1978 City University of New York
- Glassco, William S., Research Associate
- Grant, Steven,\* Professor
- Guo, Tai Liang, Assistant Professor
- Harris, Louis S. (1972) Professor  
B.A. 1954, M.A. 1956 and Ph.D. 1958 Harvard University
- Harris, Shelley A., Assistant Professor
- Ishac, Edward J. N. (1993) Assistant Professor  
B.S. 1979 and Ph.D. 1983 Monash University, Australia
- Karrow, Niel A., Research Associate
- Kessler, Fay K. (1976) Research Assistant  
M.S. 1976 Medical College of Virginia of Virginia  
Commonwealth University
- Knisely, Janet S.\*
- Lamb, Robert G.\* (1974) Professor of Pharmacology and  
Toxicology and Internal Medicine  
A.B. 1967 and Ph.D. 1970 University of North Carolina,  
Chapel Hill
- Lichtman, Aron H. (1993) Assistant Professor  
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- May, Everette Lee (1977) Professor  
B.A. 1935 Bridgewater College  
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- Moran, Richard G. (1993) Professor  
B.S. 1967 Boston College  
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- Nestler, John,\* Professor and Division Head
- Nicholson, Katherine, Assistant Professor
- Patrick, Graham A. (1973) Professor  
B.S. 1969 University of North Carolina  
Ph.D. 1973 Tunghai University
- Poklis, Alphonse,\* Professor
- Povirk, Lawrence F. (1985) Associate Professor  
B.S. 1972 Carnegie-Mellon University  
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- Ritter, Joseph K. (1993) Assistant Professor  
B.A. 1982 St. Louis University  
Ph.D. 1987 University of Utah
- Robinson, Susan E. (1981) Professor  
B.A. 1972 and Ph.D. 1976 Vanderbilt University
- Rosecrans, John A. (1967) Professor  
B.S. 1957 St. John's University  
M.S. 1960 and Ph.D. 1963 University of Rhode Island
- Rzagalinski, Beverly A. (1994) Research Associate  
B.S. 1977 Rutgers University  
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Ph.D. 1994 Old Dominion University
- Sanyal, Arun J.,\* Associate Professor
- Satin, Leslie S. (1990) Associate Professor  
A.B. 1975 University of California, Santa Barbara  
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- Sawyer, Stephen T. (1995) Associate Professor  
B.S. 1974 and Ph.D. 1980 University of Tennessee
- Schmidt-Ullrich, Rupert,\* Professor
- Schnoll, Sidney H.,\* Professor
- Selley, Dana E., Assistant Professor
- Sica, Domenic A.,\* Professor
- Sim-Selley, Laura J., Assistant Professor
- Smith, Forrest L. (1993) Assistant Professor  
B.S. 1983 Abilene Christian University  
Ph.D. 1989 Texas Tech University
- Tao, Qing (1993) Research Associate  
M.D. 1985 Beijing Medical University
- Varga, Karoly (1992) Assistant Professor  
M.D. 1978 Semmelweis Medical  
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- Venitz, Jurgen,\* Associate Professor
- Welch, Sandra P. (1983) Associate Professor  
B.S. 1971 Dakota State College  
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- White Jr., Kimber L. (1981) Associate Professor  
B.S. 1972 United States Naval Academy  
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- Wiley, Jenny Leigh (1994) Assistant Professor  
B.S. 1981 College of William and Mary  
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- Woodward, John J. (1989) Associate Professor  
B.S. 1977 Texas A & M University  
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- Borzelleca, Joseph F., Professor Emeritus  
B.S. 1952 St. Joseph's College  
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- Egle Jr., John L., Professor Emeritus  
B.S. 1961 Shepherd College  
M.S. 1963 and Ph.D. 1964 West Virginia University
- Woods, Lauren A., Professor Emeritus  
B.S. 1939 Dakota Wesleyan University  
Ph.D. 1943 Iowa State University  
M.D. 1949 University of Michigan

#### Affiliate faculty

- |                    |                       |
|--------------------|-----------------------|
| Abood, Mary E.     | Aguayo, Luis G.       |
| Carchman, Richard* | Compton, David R.     |
| Di Marzo, Vincenzo | Hayes, A. Wallace     |
| Jacobson, Arthur   | Kaminiski, Norbert E. |
| Klykken, Paal C.   | Mcafee, Donald        |
| Meade, B. Jean     | Munson, Judith A.     |
| Putney, James      | Razdan, Raj K.        |
| Rubin, Ronald P    |                       |

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## Department of Physical Medicine and Rehabilitation

### David X. Cifu

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Chair (1991)  
B.A. 1986 and M.D. 1986 Boston University

- Amir, Cyrus,\* Assistant Professor
- Bullock, M. Ross,\* Professor
- Burnette, Derek M., Assistant Professor
- Clarke, Margaret P. (1997) Instructor  
B.S. 1970 S Advent University  
M.S. 1978 Loma Linda University
- Dery, Adrienne Roberta (1988) Assistant Professor  
B.S. 1974 Auburn University  
M.B.A. 1986 James Madison University
- Elliot, Timothy R.,\* Assistant Professor
- Ericksen, Jeffery J., Assistant Professor
- Greenwald, Brian (1999) Instructor
- Gudas, Stephen A. (1978) Assistant Professor  
B.S. 1971 University of Pennsylvania  
M.S. 1976 and Ph.D. 1988 Medical College of Virginia of  
Virginia Commonwealth University
- Hess, David W., Assistant Professor
- Huang, Mark E. (1996) Assistant Professor  
B.S. 1990 Pennsylvania State University  
M.D. 1992 Jefferson Medical College
- Humphrey, Reed\*
- Jena, Tripti, Assistant Professor
- Jesudian, Alice N.,\* Assistant Professor
- Johns, Jeffrey S., Assistant Professor
- Kreutzer, Jeffrey S. (1983) Professor  
B.A. 1975 State University of New York, Binghamton  
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Ph.D. 1982 Bowling Green State University
- Lamb, Charles, Associate Professor
- Leshner, Robert T.,\* Professor
- Loughran, Thomas P.,\* Associate Professor
- Makhoul, Raymond G.,\* Associate Professor
- Marwitz, Jennifer H. (1988) Instructor  
B.S. 1986 University of Wisconsin  
M.A. 1989 University of Richmond
- McKinley, William O. (1989) Assistant Professor  
B.S. 1979 Davidson College  
M.D. 1985 Albany Medical College
- Midha, Meena
- Naumann, Thomas J. (1991) Instructor  
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- Neimeier, Janet P., Assistant Professor
- Tewksbury, Michael, Assistant Professor
- Walker, William C. (1991) Assistant Professor  
B.S. 1983 University of Virginia  
M.D. 1987 Medical College of Virginia of Virginia  
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- Zuelzer, Wilhelm A.,\* Associate Professor

#### Clinical faculty

- |                       |                         |
|-----------------------|-------------------------|
| Alexander, Alison*    | Flax, Herman J.         |
| Hermann, Richard P.   | Hinnant, Christopher A. |
| Jones, Jr., Albert M. | Leghart, Gregory        |

Mccombe, Karen R.  
Mckinley, Linda L.  
Murphy, Nancy N.  
Sizemore, Richard Macon  
Williams, James W.  
Woodard, Elizabeth

Mcgowan, James P.  
Mcneny, Margaret Robin  
Park III, Herbert  
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## Division of Rehabilitation Research

### Paul H. Wehman

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## Department of Physiology

### Margaret C. Biber

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Biber, Thomas L.\* (1975) Professor  
M.D. 1954 University of Zurich  
Ph.D. 1956 University of Berne  
Bowlins, Gary L.,\* Assistant Professor  
Cleary, Stephen F. (1964) Professor  
B.S. 1958 New York University  
M.S. 1960 University of Rochester  
Ph.D. 1964 New York University  
Clemo, Simon Henry,\* Assistant Professor  
Costanzo, Linda S. (1981) Professor  
B.A. 1969 Duke University  
Ph.D. 1973 State University of New York, Upstate  
Costanzo, Richard M. (1979) Professor  
B.S. 1969 and Ph.D. 1975 State University of New York  
DeSimone, John A. (1974) Professor  
B.A. 1964 State University of New York  
Ph.D. 1971 Harvard University  
Eckberg, Dwain L.,\* Professor  
Fabiato, Alexandre (1975) Professor  
M.D. 1969 and Ph.D. 1970 University of Paris  
Feher, Joseph J. (1977) Professor  
B.S. 1971, M.S. 1973 and Ph.D. 1978 Cornell University  
Fillmore, Helen,\* Assistant Professor  
Ford, George D., Professor  
Goldberg, Stephen J.\*  
Graham, Martin F.,\* Professor  
Grider, John R. (1981) Associate Professor  
B.A. 1973 University of Pennsylvania  
Ph.D. 1981 Hahnemann University  
Heck, Gerard L. (1980) Assistant Professor  
Ph.D. 1974 Duke University  
Hess, Michael L.,\* Professor  
Jiang, Min, Instructor  
Kalimi, Mohammed Y. (1979) Professor  
B.S. 1961, M.S. 1964 and Ph.D. 1970 Bombay University

Karnam, Srinivasa M. (1992) Assistant Professor  
B.S. 1977, M.S. 1979 and Ph.D. 1983 SV University  
Kuemerle, John F.,\* Assistant Professor  
Kukreja, Rakesh C.,\* Associate Professor  
Li, Gui-Rong, Assistant Professor  
Lyll, Vijay (1994) Assistant Professor  
B.S. 1970 Punjab University, India  
M.S. 1975 and Ph.D. 1981 Postgraduate Institute of Medical Education Research, India  
Marmarou, Anthony,\* Professor  
Mikulecky, Donald C. (1973) Professor  
B.S. 1971 Illinois Institute of Technology  
Ph.D. 1963 University of Chicago  
Miller, Gerald E.,\* Professor  
Pittman, Roland N. (1974) Professor  
B.S. 1966 and M.A. 1968 Massachusetts Institute of Technology  
Ph.D. 1971 State University of New York  
Poland, James L. (1967) Associate Professor  
B.S. 1962 Waynesburg College  
M.S. 1964 and Ph.D. 1967 West Virginia University  
Price, Steven (1966) Professor  
A.B. 1958 Adelphi University  
M.A. 1960 and Ph.D. 1961 Princeton University  
Ramo, Ary S.,\* Assistant Professor  
Ridgway, Ellis B. (1972) Professor  
B.S. 1963 Massachusetts Institute of Technology  
Ph.D. 1968 University of Oregon  
Satin, Leslie S.,\* Associate Professor  
Schoolwerth, Anton C.,\* Professor and Head, Division of Nephrology  
Schubert, Mitchell L.,\* Professor  
Shapiro, Steven,\* Associate Professor  
Simpson, David G.,\* Assistant Professor  
Tseng, Gea-Ny (1999) Associate Professor  
Walsh, Scott W.,\* Professor  
Ware, Joy Laurin,\* Professor  
Wilson, John D.,\* Associate Professor  
Witorsch, Raphael J. (1970) Professor  
A.B. 1963 New York University  
M.A. 1965 and Ph.D. 1968 Yale University

### Emeriti faculty

Briggs, F. Norman, Professor Emeritus  
A.B. 1947, M.A. 1948 and Ph.D. 1953 University of California  
Corley, Karl C., Associate Professor Emeritus  
B.S. 1958 Trinity College  
Ph.D. 1964 University of Rochester  
Edwards, Leslie E., Professor Emeritus  
B.S. 1937 and M.S. 1939 Washington State University  
Ph.D. 1944 University of Rochester  
Ham Jr., William T, Professor Emeritus  
Huf, Ernst G., Professor Emeritus  
Ph.D. 1931 and M.D. 1937 University of Frankfurt, Germany

### Affiliate faculty

Barbee, Robert W.  
Chu, Shijian  
Hill, David L.  
Leibovic, K. Nicholas

Bhatnagar, Ajay S.  
Clemo, Helen Ruth  
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Spector, Novera H.

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## Department of Preventive Medicine and Community Health

### Jack O. Lanier

Professor, Eminent Scholar, Department Chair and Associate Vice President for Health Sciences (1992)  
B.S. 1955 North Carolina A & T State University  
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D.P.H. 1975 University of Texas

Adera, Tilahun (1994) Assistant Professor  
Ph.D. 1987 Oregon State University  
Amponsah, Akwasi A.,\* Assistant Professor  
Ayres, Stephen M.,\* Professor Emeritus  
Banks, William L.,\* Professor  
Barker, Thomas,\* Professor  
Borzellea, Joseph F., Assistant Professor  
Buzzard, I. Marilyn, Associate Professor  
Cooper, Kevin R.,\* Professor and Division Head  
Danish, Steve,\* Professor  
Ginder, Gordon Dean,\* Professor  
Gurnick, Dolores A.,\* Assistant Professor  
Harris, Shelley A., Assistant Professor  
Hunt, Ronald J.\* (1998) Professor and Dean, School of Dentistry  
D.D.S. 1973 and M.S. 1982 University of Iowa  
Kaplowitz, Lisa G.,\* Associate Professor  
Kerker, Thomas M.,\* Professor  
Kilpatrick, S. James,\* Professor  
Kreutzer, Kathleen O'Kane,\* Instructor  
Luke, Roice D.,\* Professor  
Mazmanian, Paul E. (1978) Professor  
B.S. 1972 Wayne State University  
M.A. 1975 Michigan State University  
Ph.D. 1979 University of Michigan  
Murrelle, Edward Lennon,\* Assistant Professor  
Peoples, Napoleon L.,\* Associate Clinical Professor  
Rossiter, Louis F.,\* Associate Professor  
Sanders, Karen M.,\* Associate Professor  
Vance, R. Leonard (1986) Associate Professor  
B.S. 1962 Virginia Polytechnic Institute and State University  
Ph.D. 1969 University of Virginia  
J.D. 1975 University of Richmond  
Wan, Thomas T. H.,\* Professor  
Wenzel, Richard P.,\* Professor and Department Head

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Jesse, Robert W., Professor Emeritus  
M.D. 1946 University of Tennessee  
M.P.H. 1952 Johns Hopkins University  
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B.S. 1957 Richmond Professional Institute  
M.A. 1963 University of Pennsylvania  
Ph.D. 1972 University of Kentucky  
Spencer, Frederick J., Clinical Professor Emeritus  
M.B. 1945 and B.S. 1945 University of Durham, United Kingdom  
M.P.H. 1958 Harvard University

**Clinical faculty**

Armstrong, Carl	Armstrong, Carl W.*
Baffi, Charles R.	Battista, Joseph V.*
Beverly, Carolyn L.	Bradford, Judith B.
Brandt, Richard B.*	Cole, Homer
Compton, David A.	Eustis-Turf, Elizabeth Page
Gordon, Randolph	Hanna, Connie
Itskovich, Gregory A.	Jannuzzi, Daniel M.
Keene, John H.	McGehee Jr., Read F.
Miller, Grayson B.*	Miller, Jr., Grayson
Nelson, William R.	Peoples, Napoleon L.
Peterson, E. Anne	Powell, Clydette L.
Redican, Kerry J.	Ross, James W.
Stern, Donald	Stockwell, Heather G.
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B.A. 1965 Washington University  
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Adkins, Julian, Instructor  
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Alexander, Eden, Assistant Professor  
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Ph.D. 1984 Medical College of Virginia of Virginia  
Commonwealth University  
Blatecky, John J. (1991) Assistant Professor  
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Berkeley  
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Eaves, Lindon J.,\* Professor  
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Gardner, Charles (1995) Research Associate  
M.S. 1995 University of Nebraska  
Ph.D. 1976 University of Florida  
Gerber, Paul,\* Professor  
Gramling, Sandra,\* Associate Professor  
Greenfield, Nancy, Assistant Professor  
Harkins, Stephen,\* Professor  
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B.S. 1981, M.S. 1983 and Ph.D. 1985 Virginia  
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Ma, Yunlong (1996) Research Assistant  
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Robbins, Steven,\* Professor  
Ross, David, Assistant Professor  
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B.A. 1982 New College  
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Theogaraj, Janakiraj, Associate Professor  
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B.S. 1957 United States Naval Academy  
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Alessi, Robert	Anderson, Jonathan
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Berg, Phyllis A.	Berman, Lisa Myra
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Blackmer, Dana Robert	Bloomfield, Douglass
Boettcher, Dina S.	Brooks, Kenneth P.

Brown Jr., D. Earl	Brunk, Molly
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Buxton, Martin N.	Carter, Wesley B.
Caruso, Norma J.	Curtis Jr., Richard E.
Daniels-Mohring, Debbie	Davidson, Martha
Davis, Charles M.	Davis, Veronica
Deaton, Ann V.	Draper, Walter
Duchin, Louis K.	Duvall, Margaret L.
Dwyer, John P.	Entin, Alan D.
Ettigi, Prakash G.	Evans, James
Everett, Anita	Falcon, Hugo
Falk, Robert	Feix, Jeffrey
Fernandez, Anthony	Ferriss, William T.
Fisher, Gwendoline	Fleischer, Sydney
Forbes, Ronald	Forssmann-Falck, Renate
Foster, Helen	Foster Jr., Merritt W.
Friedel, Robert O.	Gaertner, W. Ronald
Gardner, Lawrence L.	Garland, Olivia J.
Garten, Joseph A.	Gomez, Humberto
Goodship, Joan Marie	Hadeed, Grace
Harp, William L.	Harrelson, Peggy
Herrick, Stephen	Holland, Henry D.
Hopkins, Kathleen	Hudson, Joyce A.
Hulburt, David S.	Jansen, Livia
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Jones, J. Kipling	Keefer, Karen
Kowler, Daniel E.	Kulstad, Jody L.
Kurgans, Martha	Lagow, Anne D.
Latham, Larry	Lindstrom, John
Little, Verda L.	Lowe, Elizabeth
Lynch, John	Maghakian, Cynthia Jayne
Markowitz, David	Martelli, Michael
Martin, Lundi	Master, Sherman
May, Theresa M.	McCall, Dwight
McLaughlin, Julia G.	Meyer III, Charles
Morris Jr., Henry E.	Morris, James J.*
Morrow, Melissa J.	Murdoch-Kitt, Norma
Nelson, Bobby W.	Nelson, Evan Stewart
Nelson, Michele K.	O'Connor, Michael D.
Olinger, Mary S.	Peck, Edward A.
Peed, Steven F.	Petry, Robert
Pierce, Willard	Pizzani, Miriam Koller
Plotkin, Joan	Reilly, Paul
Russell Jr., John	Sale, Mary Jane
Schlobohm, Philip G.	Sellman, James E.
Shah, Amit	Sheneman, Daniel P.
Shenoy, Ramakrishnan	Sheorn, Keyhill
Shepard, William A.	Shield Jr., James A.
Silberman, Henry K.	Simonini, Charles
Singh, Neena G.	Sitarz, Anne
Smith, Majorie	Solanky, Asha
Spanier, Elliott J.	Spector, Paul M.
Speer, Sandra K.	Stauffer, Suzanne
Stewart III, James W.	Stone, Jacqueline S.
Terraciano, Cynthia	Theodoridis, Dimitrios
Torres-Lisboa, Patricio	Tucker, Robin Clair
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\* Joint or secondary appointment

**Division of Ambulatory Care****Susan G. Kornstein**

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B.S., Sc.B. 1980 and M.D. 1983 Brown University

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A.A. 1962 University of Florida  
M.D. 1966 University of Tennessee  
Christian, Frances M. (1976) Associate Professor  
B.A. 1972 Howard University  
MSW 1974 University of Michigan  
Ph.D. 1994 Virginia Commonwealth University  
Karthaus, Patricia, Assistant Professor  
Kendler, Kenneth S. (1983) Professor and Eminent Scholar  
B.A. 1972 University of California  
M.D. 1976 Stanford University  
Kudlas, Jane, Assistant Professor  
McDaniel, Kent, Assistant Professor  
McKenzie, Norma D. (1987) Assistant Professor  
B.A. 1965 Stanford University  
M.S. 1967 University of Oregon  
M.D. 1971 University of California  
Mishra, Asha S. (1985) Associate Professor  
B.S. 1976 and M.D. 1976 Lady Hardinge Medical College, India  
Shires, Betsy W., Assistant Professor  
Sholar, Elbert F. (1991) Assistant Professor  
A.B. 1982 Washington University  
M.D. 1987 St. Louis University  
Sood, Aradhana A. (1988) Associate Professor  
M.B.B.S. 1979  
M.S. 1980 Gajra Raja Medical College, India  
Sriram, Thiruneermalai G., Assistant Professor  
Terraciano, Thomas L., Assistant Professor  
Thomas, J. Randall (1988) Associate Professor  
B.S. 1975 Bowling Green State University  
M.A. 1977 and Ph.D. 1982 University of Florida  
Urbach, John R. (1984) Associate Professor  
A.B. 1973 Cornell University  
M.D. 1977 University of Michigan  
Weber, David J. (1976) Associate Professor  
M.D. 1971 Jefferson Medical

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Al-Mateen, Cheryl S. (1989) Associate Professor  
B.S. 1981 and M.D. 1983 Howard University  
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M.D. 1971 University of Singapore

Cohen, Robert (1984) Professor  
B.A. 1962 Drew University  
M.S. 1966 and Ph.D. 1967 Syracuse University  
Cole, Debra E. (1991) Assistant Professor  
Ph.D. 1987 Virginia Polytechnic Institute and State University  
Doyle, Nancy L. (1991) Assistant Professor  
B.S. 1975 Medical College of Virginia of Virginia Commonwealth University  
M.S. 1981 Chapman College  
Fahey, William (1996) Assistant Professor  
Ph.D. 1992 Indiana State  
Hill, Janet, Assistant Professor  
Marshall, Lisa A., Assistant Professor  
Moritz, Jennine (1994) Assistant Professor  
B.S. 1988 University of S. Sewanee  
M.A. 1991 and Ph.D. 1993 University of South Florida  
O'Keefe, Dorothy A., Assistant Professor  
Oswald, Donald, Associate Professor  
Singh, Nirbhay N. (1989) Professor  
B.A. 1972, M.A. 1973 and Ph.D. 1979 University of Auckland, New Zealand  
Sonnenklar, Neil A. (1991) Assistant Professor  
B.A. 1973 Cornell University  
M.D. 1977 University of Michigan  
Wood, Isaac K. (1989) Associate Professor  
B.S. 1978 Lynchburg College  
M.D. 1982 Medical College of Virginia of Virginia Commonwealth University

**Clinical faculty**

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Smith, Angela	Waters, Karen

**Division of Clinical Psychology****Robert P. Hart**

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B.A. 1975, M.A. 1977 and Ph.D. 1980 North Illinois University

Culbert, James P. (1981) Associate Professor  
B.A. 1972 State University of New York, Buffalo  
B.S. 1974 and Ph.D. 1979 University of Florida  
Haller, Deborah L. (1987) Associate Professor  
B.A. 1972 Ohio State University  
M.A. 1975 and Ph.D. 1980 University of Alabama  
Ingersoll, Karen (1992) Assistant Professor  
Ph.D. 1992 University of Virginia  
Olbrisch, Mary Ellen (1985) Associate Professor  
B.A. 1973 DePaul University  
M.S. 1975 and Ph.D. 1978 Florida State University  
Wade, James B. (1984) Associate Professor  
B.A. 1979 State University of New York  
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**Clinical faculty**

Ehrmantraut, John E.	Lowe, Burt
Morris, James	Reif, Thomas F.

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B.A. 1973 University of Chicago  
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Alkhawaga, Esam, Assistant Professor  
Jesudian, Alice N., Assistant Professor  
Schneider, Robert K., Assistant Professor  
Watts, Charlotte, Assistant Professor

**Division of Inpatient Psychiatry****Ananda K. Pandurangi**

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M.B.B.S. 1975 University of Madras  
M.D. 1978 University of Bangalore  
A.B.P.N. 1985 Evanston Ill

Barker, Sandra B. (1990) Associate Professor  
B.A. 1972 University of Florida  
M.S. 1976 and Ph.D. 1978 Florida State University  
Fanous, Ayman, Assistant Professor  
Klinger, Rochelle L. (1987) Associate Professor  
B.A. 1982 and M.D. 1982 Boston University  
Lakhani, Sultan Ali, Assistant Professor  
Sood, Rakesh K. (1988) Associate Professor  
M.B.B.S. 1977 Maulana Azad Medical College, India

**Department of Psychology**

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Wiley, Jenny L., \* Assistant Professor

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Forssmann-Falck, Renate\*

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M.D. 1970 University of Heidelberg, Germany

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Arnfield, Mark Robert (1993) Assistant Professor  
B.S. 1977 and M.S. 1980 University of Toronto  
Ph.D. 1989 University of Alberta  
Arthur, Douglas W. (1990) Assistant Professor  
M.D. 1989 Wake Forest University  
Bartee, Christopher L., Research Associate  
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B.A. 1980 University of California, San Diego  
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Ph.D. 1992 University of California, Los Angeles  
Cardinale, Robert M. (1995) Assistant Professor  
M.D. 1991 University of Maryland  
Dent, Paul (1996) Assistant Professor  
B.S. 1988 University of New Castle  
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Hagan, Michael P., Associate Professor

Johnson, Christopher R. (1986) Associate Professor  
B.A. 1976 University of Virginia  
M.D. 1981 Medical College of Virginia of Virginia  
Commonwealth University

Kachnic, Lisa A. (1996) Assistant Professor

Kavanagh, Brian D. (1993) Assistant Professor  
B.S. 1984, M.P.H. 1988 and M.D. 1988 Tulane University

Keall, Paul Jean, Assistant Professor

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B.S. 1986 Rensselaer Polytechnic Institute  
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Lin, Peck-Sun (1988) Professor  
B.S. 1960 and M.S. 1963 National Taiwan University  
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Mikkelsen, Ross B. (1988) Professor  
B.A. 1968 and Ph.D. 1973 University of California, Santa  
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Morris, Monica R., Assistant Professor

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B.A. 1976 College of William and Mary  
M.B.A. 1984 Virginia Commonwealth University

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M.S. 1980 Royal Institute of Technology, Sweden  
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Ph.D. 1986 Royal Institute of Technology, Sweden

Wu, Qiuwen (1996) Assistant Professor  
B.S. 1988 University of Science and Technology  
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Wu, Yan, Instructor

Zwicker, Robert D. (1988) Associate Professor  
B.S. 1962 Purdue University  
M.S. 1969 and Ph.D. 1972 University of Kentucky

#### Clinical faculty

Heath, Robert	Kinard, James Donald
Lundeen, William Bruce	Sinesi, Christopher C.
Sobczak, Mark L.	Tercilla, Oscar F.
Walden, Thomas	

### Department of Radiology

#### James L. Tatum

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B.S. 1969 College of William and Mary  
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Broga, Dean W.\* (1975) Associate Professor and Director,  
Environmental Health and Safety  
B.S. 1974 Lowell Technological Institute  
M.S. 1976 University of Lowell  
Ph.D. 1983 University of Virginia

Elliott, Sherry C. (1986) Assistant Professor  
B.S. 1982 and M.B.A. 1985 Virginia Commonwealth  
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Marmarou, Anthony\* (1982) Professor of Radiology and  
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B.S. 1959 Drexel University  
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Ph.D. 1973 Drexel University

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B.S. 1949 University of Missouri  
M.D. 1953 University of Tennessee

#### Clinical faculty

Balkissoon, Avinash	Buetow, Peter C.
Dufour, Jean Maurice	Faunce III, Howard
Finnegan, Maurice	Futterer, Stephen F.
Girevendulis, Alexander	Goldschmidt, Robert A.
Gordon, Daniel S.	Grizzard, John D.
Howell, Talmadge R.	Jensen, Mary E.
Kallmes, David F.	Konerding, Karsten
Kurdziel, Karen	Kuta, A. John
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### Division of Diagnostic Radiology

#### Henry, Daniel A.

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Cole, Timothy J. (1992) Assistant Professor  
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Coleman, Amy B., Instructor

Cortinas, Teresa Maria (1999) Instructor

Damiano, Thomas R., Assistant Professor

Disler, David G., Associate Professor

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Hogge, Jacquelyn P., Assistant Professor

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B.S. 1971 Colorado State University  
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B.S. 1968 Rockhurst College  
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Narla, Lakshmana Das (1988) Associate Professor  
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Proto, Anthony V., Professor

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Rowell, Criag Gorlick, Assistant Professor

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B.S. 1957 and M.D. 1964 San Marcos National  
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Wright, Terry Lewis, Assistant Professor

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Marx, William F.	Mongeon, Michael E.
Sobel, Amy H.	Szucs, Richard A.

### Division of Nuclear Medicine

#### Melvin J. Fratin

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M.D. 1964 Medical College of Virginia

Burke, Timothy S., Associate Professor

Hirsch, Jerry I. (1970) Professor  
B.S. 1967 Brooklyn College of Pharmacy  
M.S. 1969 and Pharm.D. 1970 Philadelphia College of  
Pharmacy and Science

Jolles, Paul R., Assistant Professor

Kalen, Joseph D. (1992) Assistant Professor  
B.S. 1978 State University of New York  
M.S. 1982 and Ph.D. 1987 Ohio State University

**Clinical faculty**

Kurdziel, Karen

**Division of  
Radiation Physics and Biology**
**Panos P. Fatouros**

Professor and Division Head (1978)  
B.S. 1968 University of Florida  
Ph.D. 1975 Ohio State University

Corwin, Frank D. (1987) Instructor  
B.S. 1985 Virginia Polytechnic Institute and State University

M.S. 1994 Virginia Commonwealth University  
Kraft, Kenneth A. (1983) Assistant Professor  
B.S. 1977 Westminster College  
M.S. 1979 and Ph.D. 1982 University of Rochester

Wilson, John D. (1970) Associate Professor  
B.A. 1960 Carleton College  
M.A. 1963 and Ph.D. 1966 University of Illinois

**Department of Surgery****Ronald C. Merrell**

Professor and Department Chair (1999)  
B.S. 1967 and M.D. 1970 University of Alabama

Abubaker, A. Omar,\* Assistant Professor  
Arancibia, Carlos U.,\* Professor  
Banks, W. L.,\* Professor  
Campbell, Robert L.,\* Associate Professor  
Casey, Thomas H. (1982) Assistant Professor  
M.B.A. 1979 University of Richmond  
Ph.D. 1995 Virginia Commonwealth University  
Chandler, Leonard,\* Assistant Professor  
Choi, Sung C.,\* Professor  
Diegelmann, Robert F.,\* Professor  
Diener, Randy M.,\* Assistant Professor  
Doarn, Charles R., Assistant Professor  
Ellenbogen, Kenneth A.,\* Professor  
Ellis, Earl F.,\* Professor  
Farquhar, Doris D., Instructor  
Fitzgerald, Sara M., Research Assistant  
Friedman, Richard B.,\* Assistant Professor  
Garrett, Algin B.,\* Professor and Department Head  
Giglio, James A.,\* Associate Professor  
Guttu, Arnold L.,\* Assistant Professor  
Hsia, Peng-Wie,\* Assistant Professor  
Ivatury, Rao R., Professor  
King, Anne L.,\* Associate Professor  
Laskin, Daniel,\* Professor  
Levenson, James L.,\* Professor  
Merchant, Randall E.,\* Professor  
Moray, Lawrence,\* Assistant Professor  
Newsome, Heber H.,\* Professor  
Olbrisch, Mary E.,\* Associate Professor  
Povlishock, John T.,\* Professor  
Smoker, Wendy R. K.,\* Professor  
Strauss, Robert A.,\* Associate Professor  
Sypniewski, Edward,\* Assistant Professor  
Tisnado, Jaime,\* Professor  
Ware, Joy Laurin,\* Professor

**Emeriti faculty**

Bosher Jr., Lewis H., Professor Emeritus  
B.S. 1935 University of Virginia  
M.D. 1940 Harvard University  
Graham, A. Stephens, Associate Clinical Professor Emeritus  
M.D. 1925 University of Minnesota  
Haynes Jr., Boyd W., Professor Emeritus  
M.D. 1941 University of Louisville  
Horsley III, J. Shelton, Professor Emeritus  
B.S. 1950 and M.D. 1953 University of Virginia  
Koontz Jr., Warren W., Professor Emeritus  
B.A. 1953 Virginia Military Institute  
M.D. 1957 University of Virginia  
Lawrence Jr., Walter, Professor Emeritus  
B.S. 1944, S.B. 1945 and M.D. 1948 University of Chicago  
Lee, Hyung Mo, Professor Emeritus  
B.S. 1945 Keijo Imperial University, Korea  
M.D. 1949 Seoul National University, Korea  
Lower, Richard R., Professor Emeritus  
A.B. 1951 Amherst College  
M.D. 1955 Cornell University  
Smith, Vernon, Professor Emeritus  
Williams Jr., Carrington, Clinical Professor Emeritus  
B.A. 1938 University of Virginia  
M.D. 1942 Harvard University

**Clinical faculty**

Armitage, John M.	Beazley III, Wyatt S.
Bosher, L. Paul	Boyer, Allen S.
Brown, Peter W.	Bryson, Gilbert
Burger Jr., Ray E.	Burke III, George W.
Byrd, Charles W.	Christie Jr., Laurence
Coleman, Custis L.	Cornell, David
Cote, Eric Paul	Darden Jr., James
Davis, Ronald K.	Deyerle, W. Minor
Dolenc, Vinko V.	Doss Jr., Otis W.
Easterly III, Harry	Evans, Martin T.
Gayle, William E.	Gillies, George Thomas
Gomułka, Patricia	Haines, David
Hoefer, Richard A.	Howell, Halstead D.
Hutcher, Neil E.	James, Charles M.*
Kirsch, Wolff M.	Knaysi Jr., George A.
Kurup, Manikoth G.	Lanning, David
Leibovic, Stephen*	Ludeman, Douglass
Mathern, Bruce	Mathews, Hallett H.*
Mckain, Carey	Mclaughlin, Colleen*
Melzig, Erick P.	Merchant III, Wilson
Nevin III, James E.	Oliver Sr., Jerry A.
Poulos, Nicholas G.	Ratliff, James E.
Robertson, William	Sahni, K. Singh
Sharp, Julie G.	Sliwinski, Anthony
Stalker, Campbell G.	Talman, Edward A.
Tunner, William S.	Whitley, Ronald E.
Winslow, Boyd	Yeh Jr., Thomas*
Zimberg, Yale H.	

**Division of Cardiothoracic Surgery****Robert S. Higgins**

Associate Professor and Division Head

Abd-Elfattah, Anwar S. (1988) Professor  
B.S. 1970 and M.S. 1974 Alexandria University, Egypt  
Ph.D. 1979 Mississippi State University

Benton, John E. (1996) Instructor  
B.S. 1971 Randolph-Macon College  
B.M.S. 1977 Duke University  
Brooks, James W. (1956) Professor  
B.S. 1943 The Citadel  
M.D. 1946 Medical College of Virginia  
Cohen, Neri M., Assistant Professor  
Durham, Lucian A., Assistant Professor  
Salter, David R. (1989) Associate Professor  
M.D. 1974, F.R.C.S. 1981 and F.R.C.S. 1983 University of Toronto

**Clinical faculty**

Dignan, Rebecca Gilliam, F. Roosevelt  
Mohamed, Ali I.

**Division of General and Trauma  
Surgery**
**Harvey J. Sugerman**

Professor and Division Head (1978)  
B.A. 1959 Johns Hopkins University  
M.S. 1962 and M.D. 1966 Jefferson University

Barry, Daniel P. (1996) Instructor  
B.S. 1986 and M.H.A. 1990 Virginia Commonwealth University  
Broderick, Timothy J. (1997) Assistant Professor  
B.S. 1986 Xavier University  
M.D. 1990 University of Cincinnati  
DeMaria, Eric J. (1990) Assistant Professor  
B.A. 1983 and M.D. 1983 Boston University  
Gould Jr., James H. (1983) Instructor  
1992 Virginia Commonwealth University  
A.A.S. 1994 J. Sargeant Reynolds Community College  
Harnett, Brett M., Research Assistant  
Ivatury, Rao R., Professor  
Kellum, John M. (1983) Professor  
M.D. 1969 Johns Hopkins University  
Latifi, Rifat, Assistant Professor  
Merriam, Nathaniel R., Research Assistant  
Morse, Virginia L., Instructor  
Savas, Jeannie F., Assistant Professor  
Schweitzer, Michael A., Assistant Professor  
Stewart, Norman H., Research Assistant  
Wolfe, Luke G. (1982) Instructor  
B.A. 1980 Bridgewater College  
M.S. 1982 Medical College of Virginia of Virginia Commonwealth University  
Yelon, Jay A., Assistant Professor

**Clinical faculty**

Mctamney, James O'Neill, Jennifer K.  
Pellicane Jr., James V. Timmerman, William R.

**Division of Neurosurgery****Harold F. Young**

Professor, Eminent Scholar and Division Head (1972)  
B.A. 1959 and M.D. 1963 Ohio State University

Broaddus, William C. (1991) Assistant Professor  
B.A. 1975 Cornell University  
Ph.D. 1982 and M.D. 1984 Case Western Reserve University



Bullock, M. Ross (1992) Associate Professor  
M.B.Ch.B. 1975 Birmingham University  
F.R.C.S. 1980 and F.R.C.S. 1983 Royal College of Surgeons of Edinburgh

Crute, Stephen L. (1987) Research Assistant  
1969 University of Richmond

Delahunty-Rice, Therese M., Assistant Professor

Dunbar, Jana G. (1981) Research Assistant  
B.S. 1979 and M.S. 1987 Virginia Commonwealth University

Fillmore, Helen, Assistant Professor

Graham, Robert Scott, Assistant Professor

Helmick, Katherine M., Research Assistant

Holloway, Kathryn L. (1990) Assistant Professor  
B.S. 1980 and M.D. 1984 Rutgers University

Liemberger, Alyssa E., Research Assistant

Lutz III, Harry A. (1979) Associate Professor  
B.S. 1967 University of Virginia

M.A. 1970 and Ph.D. 1975 Temple University

Marmarou, Anthony (1982) Professor and Eminent Scholar

B.S. 1959 Drexel University

M.S. 1966 University of Pennsylvania

Ph.D. 1973 Drexel University

Reeves, Thomas M., Assistant Professor

Ward, John D. (1991) Professor

B.S. 1966 Xavier University

M.D. 1970 University of Cincinnati

#### Clinical faculty

Kell Jr., Joseph F.

Singer, Robert P.

White, William R.

### Division of Pediatric Surgery

#### Charles E. Bagwell

Professor and Division Head (1993)

B.S. 1972 Wake Forest University

M.D. 1976 Bowman Gray School of Medicine

Haynes, Jeffrey H. (1996) Assistant Professor

#### Clinical faculty

Frantz, Frazier W.

### Division of Plastic and Reconstructive Surgery

#### Austin I. Mehrof Jr.

Associate Professor and Division Head (1972)

B.A. 1964 and M.A. 1965 Colgate University

D.D.S. 1969 Columbia University

M.D. 1975 Albany Medical College

Bandak, Abdalla Z., Assistant Professor

Cohen, I. Kelman (1972) Professor

B.S. 1959 Columbia University

M.D. 1963 University of North Carolina

Creehan, M. Suzanne, Assistant Professor

Maragh, Hallene A. (1989) Assistant Professor

M.B.B.S. 1972 University of the West Indies, Jamaica

Pozet, Andrea L. (1989) Assistant Professor

B.A. 1975 Antioch College

M.D. 1980 Universidad Autonoma de Guadalajara, Mexico

Wornom III, Isaac L. (1989) Associate Professor

B.A. 1977 Washington and Lee University

M.D. 1981 University of Virginia

Yager, Dorne R. (1990) Assistant Professor

B.S. 1976 Michigan State University

Ph.D. 1985 University of North Carolina, Chapel Hill

#### Clinical faculty

Bermant, Michael

Boykin, Jr., Joseph V.

Carrico, Thomas

Davis, Kay S.

Deconti, Robert W.

Dewire Sr., Thomas M.

Horton, Charles E.

Mckeown, Joseph E.

Merritt, Wyndell H.

Olshansky, Pettyth

Petty, Carol T.

Redman, Richard D.

Rowe, Douglas S.

Ware, James L.

### Division of Surgical Oncology

#### Harry D. Bear

Professor, Eminent Scholar and Division Head (1984)

B.A. 1971 Yale University

M.D. 1975 and Ph.D. 1978 Medical College of Virginia of Virginia Commonwealth University

Kaplan, Brian J., Assistant Professor

Karp, Stephen E. (1996) Assistant Professor

M.D. 1981 McGill University

Neifeld, James P. (1978) Professor

B.S. 1968 Lafayette College

M.D. 1972 Medical College of Virginia of Virginia Commonwealth University

#### Emeritus faculty

Lawrence Jr., Walter

#### Clinical faculty

Cornell, David

Clary, Richard M.

Parker, George

### Division of Transplant Surgery

#### Marc P. Posner

Professor and Division Head (1984)

B.A. 1971 Bucknell University

M.D. 1976 Medical College of Wisconsin

Fisher, Mary Ruth (1988) Instructor

B.S. 1986 Medical College of Virginia of Virginia Commonwealth University

Godkin, Robin R. (1992) Instructor

B.S. 1988 Texas A & M University

B.S. 1990 University of Texas

Ham, John M. (1993) Assistant Professor

B.S. 1976 Walla Walla College

M.D. 1980 Loma Linda University

Kimball, Pamela M. (1994) Associate Professor

B.S. 1978 University of North Carolina, Chapel Hill

Ph.D. 1981 University of Alabama, Birmingham

Marcos, Amadeo, Assistant Professor

#### Clinical faculty

Millis, James M.

### Division of Urology

#### Unyime O. Nseyo

Professor and Division Head

Hackler, Robert H. (1971) Associate Professor

B.A. 1956 and M.D. 1960 University of North Carolina

Katz, P. Gary (1982) Associate Professor

B.S. 1968 and M.D. 1972 McGill University

#### Clinical Faculty

Atwill, William H.

Bates, Robley D.

Bigley Jr., H. Alan

Bokinsky, Gary

Concodora, Joseph A.

Dodson Jr., Austin

Duck, George B.

Feminella, John

Frederick, L. Arnold

Graham, Richard W.

Graham, Sam D.

Green, Lonny

Hill, J. Edward

Koziol, Isaac

Lanyi, Thomas R.

Morgan, William R.

Rollins, Kent L.

Smith, Maurice J. V.

Smith-Harrison, Leon

Texter, John

Woolley, Daniel S.

Zaki, Kareem

### Division of Veterans

#### Administration Medical Center

#### Hunter McGuire

Division Head

### Division of Vascular Surgery

#### Raymond G. Makhoul

Associate Professor and Division Head (1991)

B.S. 1978 University of Michigan

M.D. 1982 University of Chicago

Lery, Mark M., Assistant Professor

Mest, Simon J. (1988) Assistant Professor

B.A. 1975 La Salle College

D.P.M. 1981 Pennsylvania College of Pediatric Medicine

Snowden, Mary R., Instructor

#### Clinical faculty

Hyslop, John W.

Londrey, Gregg Leslie



# School of Nursing

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**A leader of nursing education in Virginia, the School of Nursing has designed traditional and continuing education curricula to fit the needs of the nursing profession. Located on the MCV Campus and in a major metropolitan area, the school has ample access to state-of-the-art facilities and resources to further innovative research and teaching in the nursing profession.**

## Undergraduate Program and Specializations

Nursing B.S.  
Traditional  
R.N.-B.S. Completion

**1220 E. Broad St. • P.O. Box 980567**  
**Richmond, VA 23298-0567**  
**(804) 828-5171 • Fax (804) 828-7743**  
**views.vcu.edu/son/son.html**

**Nancy F. Langston**

Dean (1991)  
 B.S.N. 1966 University of Arkansas  
 M.N. 1972 Emory University  
 Ph.D. 1977 Georgia State University

**Inez Tuck**

Associate Professor  
 and Interim Associate Dean (1999)  
 B.S.N. 1970 A&T State University, N.C.  
 M.N. 1972 University of Florida, Gainesville  
 Ph.D. 1980 University of North Carolina, Greensboro  
 M.B.A. 1995 University of Tennessee, Knoxville

**Janet B. Younger**

Professor and Associate Dean  
 for Undergraduate Programs (1984)  
 B.S. 1967 Medical College of Virginia  
 M.Ed. 1970 University of Virginia  
 M.S. 1972 Virginia Commonwealth University  
 Ph.D. 1984 University of Virginia

**Anthony J. DeLellis**

Assistant Dean for Administration (1985)  
 B.A. 1970 University of Delaware  
 M.A. 1973 Central Michigan University  
 Ed.D. 1977 University of Virginia

The School of Nursing originated in 1893 as part of the University College of Medicine. Since then the educational program has evolved to multiple programs at the baccalaureate, master's and doctoral degree levels. The undergraduate program contains bachelor of science degree options for traditional students at the sophomore level, an accelerated second degree option for those with a bachelor of science degree in another field and an option for registered nurses seeking completion of a bachelor of science degree. An active research program and continuing education opportunities are included. The School of Nursing continues to be a leader in nursing education in Virginia.

## Programs

Bachelor of science, master of science, post-master's certificate and doctor of philosophy degree programs are offered through the School of Nursing. For information regarding the graduate programs, see the Graduate

Bulletin available on the Web.

— — — [www.vcu.edu/gradweb](http://www.vcu.edu/gradweb)

Complete information regarding curriculum and admissions may be obtained by writing to the Office of Enrollment and Student Services, School of Nursing, Medical College of Virginia of Virginia Commonwealth University, P.O. Box 980567, Richmond, VA 23298-0567.

## Facilities and resources

The faculty and administrative offices of the school are housed in the Nursing Education Building, 1220 E. Broad St. Additionally, this building has a nursing clinical resource laboratory, computer laboratory, and classrooms equipped with a full range of audio-visual equipment. Both graduate and undergraduate courses also are scheduled in other classrooms on campus.

The clinical laboratories for nursing courses are conducted in the MCV Hospitals of Virginia Commonwealth University and in numerous other hospitals and health agencies in the area. Students are given a diversity of experiences in hospital and community-oriented nursing.

## Accreditation

The baccalaureate degree program in nursing is accredited by the National League for Nursing Accrediting Commission, 61 Broadway, 33rd Floor, New York, NY 10006 (1-800-669-1656, ext. 153). The program is approved by the Virginia State Board of Nursing, and graduates are eligible to take the registered nurse licensing examination.

The master's degree program is accredited by the National League for Nursing Council of Baccalaureate and Higher Degree Programs. The nurse practitioner concentrations (ANP, FNP, WHNP, PNP) are approved by the joint boards of nursing and medicine of Virginia.

## Nursing alumni

All graduates are eligible for membership in the Nursing Alumni Division of the Medical College of Virginia Alumni Association of VCU. The purpose of the division is to support and promote the School of Nursing. The division also provides support within the university to promote and encourage the development

of nursing services of the highest possible quality, to stimulate professional growth, and to promote cooperation and fellowship among nursing alumni and students.

## Annual lectureships

Outstanding scholars are brought to the campus through a variety of resources. Students in the School of Nursing have access to special programs of an intellectual and cultural nature on both campuses of the university.

The Annual Nursing Lectureship, established in 1966 by contributions from alumni and friends of the School of Nursing, brings to the campus each year a person of national stature in the field of nursing. Alumni and faculty plan and implement the lectureship, which serves as an open forum to many public speakers in the health fields.

The Yingling Visiting Scholar Program was established in 1981 by alumni and friends of Dr. Doris B. Yingling upon her retirement, in recognition of her many years of service as dean of the School of Nursing. The fund supports visits by eminent scholars to the School of Nursing.

## School honors and awards

**Sigma Theta Tau.** The School of Nursing inducted its first members in the fall of 1976. This local honor society was accepted as a chapter of the international nursing honor society, Sigma Theta Tau, in fall 1977. The chapter, known as Gamma Omega, installed its first members in fall 1978. The purposes of Sigma Theta Tau are to recognize superior achievement and leadership qualities, to foster high professional standards, and to strengthen commitment to the ideals and purposes of the profession.

**Becky Godwin Fund.** This fund was established by former Dean Yingling in 1978 following completion of the Honorable Mills E. Godwin Jr.'s second term as governor of Virginia. The fund was established in memory of former governor and Mrs. Godwin's only daughter, Becky. The interest on the endowment contributed to the School of Nursing by Dr. Yingling provides funds to enhance student professionalism in nursing for individuals enrolled in the undergraduate and graduate programs. Awards from the

fund are made on an annual basis by the dean.

**Yingling Senior Achievement Award.** Gifts to the institution to honor former Dean Yingling have been used to establish an annual award to a senior student in the School of Nursing. Recognition is based on outstanding leadership ability and potential professional growth as determined by a selection of faculty and students.

**Mable Montgomery Award.** This award was established through gifts of faculty and students in honor of Miss Mable E. Montgomery, executive secretary of the Virginia State Board of Nursing, 1949-70. The award is given annually to a senior student and a faculty member. Leadership, excellence in nursing and outstanding personal qualities are considered in selecting the recipients.

**Marguerite G. Nicholson Award.** This award was established by alumni and friends of the school to honor a beloved alumna and former faculty member. The award is presented annually to a graduating senior student who best demonstrates the humanitarian qualities of unselfishness, helpfulness to others, consideration, humility and loyalty to the school.

**Mayme B. Wilson Lacey Award.** Established by alumni of the former St. Philip School of Nursing, this award honors an outstanding alumna of the school who served for many years as assistant director of nursing services for MCV Hospitals. The recipient, a senior nursing student, must be a well-rounded individual committed to nursing as a profession, who gives consistently good nursing care, has the ability to work well with the health team, and shows promise of supporting professional organizations.

**Temple Memorial Award.** The senior and junior classes, 1976-77, and the alumni from the School of Nursing established this award in memory of President and Mrs. T. Edward Temple. The award is given annually to a graduating student in the master's degree program. The recipient must possess characteristics that demonstrate exemplary performance in the advocacy role for the consumer of health care services and for the profession of nursing.

**Martha M. Borlick Research Award.** This award was established in 1980 by an alumna in honor of Dr. Borlick, who served as chair of the

Department of Community Health Nursing from 1970-1978. The annual award honors a graduate student in nursing research as evidenced by the master's thesis.

**Registered Nurse Student Award.** The Registered Nurse Student Award is given in recognition of performance and achievement within the School of Nursing. The award is presented annually to a graduating senior who demonstrates excellence in clinical expertise, leadership and personal qualities. This award is given with funds provided by faculty in recognition of the increasing number of registered nurses returning for baccalaureate degrees.

**Student Nurses' Association Award.** Initiated by members of the organization, this award is given in recognition of outstanding participation in the Student Nurses' Association. The award is presented to a senior NSA member who has demonstrated leadership, dedication and enthusiasm for the nursing profession through involvement in the organization.

### Financial assistance

Financial assistance is available. Information may be obtained by writing to the Office of University Student Affairs/Financial Aid, Medical College of Virginia of Virginia Commonwealth University, P.O. Box 980244, Richmond, VA 23298-0244.

### Bachelor of Science in Nursing Program

The School of Nursing has two tracks in the baccalaureate program: (1) the traditional, and (2) the R.N.-B.S. completion. High school students wishing to attend VCU for the entire four years should apply to the pre-nursing program in VCU's College of Humanities and Sciences. Further information on the university's pre-nursing program is provided in the "College of Humanities and Sciences" section of this bulletin.

### Admissions

Applications for admission are welcome from men and women from any cultural or ethnic background who are interested in a career in professional nursing. Admission into the School of Nursing is competitive. Minimum admission criteria require that an

applicant must be eligible for readmission to or in good standing at the last college attended; have a minimum TOEFL score of 550 if they do not use English as their natural language; and have a minimum GPA of 2.5 based on a scale of 4.0. Grades lower than "C" in any required courses are not acceptable. Admission GPA is calculated on courses required for the School of Nursing. Applicants should submit SAT, ACT, MAT or GRE scores. All applicants to the undergraduate program must have a minimum of 700 (combined original norm or 830 recentered norm) on the SAT or a comparable score on the GRE, MAT or ACT to be considered for admission to the program. Applicants are required to complete an application and submit the required transcripts, references and standardized test scores by Jan. 15 for traditional applicants and March 15 for R.N.-B.S. applicants. Applications may be obtained from the Office of Undergraduate Admissions, P.O. Box 980632, Virginia Commonwealth University, Richmond, VA 23298-0632, (804) 828-0488 or 1-800-828-9451. Applicants to the R.N.-B.S. program may submit California Critical Thinking scores in lieu of the above tests.

Pre-nursing candidates seeking admission to the freshman class at VCU may receive preliminary admission to the School of Nursing. Students interested in preliminary admission should present a minimum high school GPA of 3.2, rank in the top quarter of their class, and have combined SAT scores above 1100 after recentering. At the end of the first semester of the freshman year, the student should have a GPA of 3.0 or greater on the first semester of full-time study at VCU. Students must complete all pre-nursing requirements prior to nursing school entry in the fall semester of the sophomore year and must have at least a "C" in all courses. Students who fail to achieve a 3.0 GPA at the end of the first semester of the freshman year will be ineligible to automatically transfer into the School of Nursing without a second application.

Applicants for admission to the undergraduate program who wish to be considered for early acceptance will be considered if the following criteria are met: (1) submission of the complete application by Nov. 1; (2) GPA of at least

3.4; and (3) SAT (or equivalent) scores of at least 1100 on recentered scores.

Applicants who are registered nurses and who seek a baccalaureate degree apply to the R.N.-B.S. Completion Program. In addition to traditional admission criteria, applicants must meet the following requirements to be considered: (1) be graduates of state-approved diploma or associate degree programs in nursing; (2) hold a current Virginia license to practice professional nursing.

In addition to taking courses, R.N. students may establish credit toward the baccalaureate degree in several ways: (1) by portfolio; (2) through transfer of credit from other colleges; and (3) through proficiency examinations using the College Level Examination Program (CLEP) for general education and through National League of Nursing standardized examinations for anatomy, physiology, microbiology and nutrition. Information about the CLEP tests may be obtained from the CLEP Administrator, Office of Community Programs, Virginia Commonwealth University, P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-8420. CLEP tests are given on a monthly schedule, and arrangements to be tested may be made one month prior to the testing date. Subject examinations are available in multiple areas as listed in information available for the College Entrance Examination Board. Students may earn full course credit by examination for general education courses.

Registered nurses who have achieved baccalaureate degrees in another discipline may apply to the master of science program in nursing.

## Curriculum

In the traditional program, the freshman year may be taken at VCU's Academic Campus or at any other accredited college or university. It is the applicant's responsibility to seek advice from the School of Nursing on courses taken prior to admission. Students transferring from another college or university will enter the program as sophomores.

Fifty-six semester hours of general education courses are required for graduation.

## General education requirements

### 1. Communicating

Prerequisites: English composition 3 credits and ENGL 200 or its equivalent.

### 2. Ethics

Prerequisite: Ethics or philosophy 3 credits.

### 3. Quantity and form

Prerequisite: College-level math, statistics or algebra 3 credits.

### 4. Science and technology

Prerequisite: Biology 4 credits, anatomy 4 credits, physiology\* 4 credits, microbiology\* 4 credits, nutrition 3 credits, laboratory science\*\* 4 credits.

### 5. Interdependence

Prerequisite: Sociology 3 credits; humanities elective (e.g., foreign language, history) 6 credits.

### 6. Visual and performing arts

Prerequisite: A course in the arts from the approved list provided by the School of the Arts; 3 credits (see the "School of the Arts," Part X of this Bulletin for the approved list).

### 7. Humanities and social sciences

Prerequisites: Psychology 3 credits, developmental psychology 3 credits, and general electives 3 credits.

\* Physiology and microbiology credits must be earned within 10 years preceding admission.

\*\* If high school chemistry or its equivalent is not passed with a "C" or better, the laboratory science must be chemistry.

## Traditional program

Honors sections are available for a number of courses. A typical program for the traditional program is as follows:

Freshman year, fall semester	credits
Composition	3
Biology	4
Mathematics or statistics	3
Psychology	3
Sociology	3
	16

### Freshman year, spring semester

NURS 100 Risk Appraisal and Health Promotion in Today's World	3
Nutrition	3
Humanities	3
Laboratory science	4
Anatomy	4
	17

### Sophomore year, fall semester

NURS 261 Health Assessment for Nursing Practice	3
Developmental psychology	3
Physiology	4
Philosophy/ethics/logic/critical thinking	3
NURS 201 Concepts of Nursing	3
	16

### Sophomore year, spring semester

Visual/performing arts	3
NURS 202 Technologies of Nursing Practice	3
Microbiology	4
ENGL 200 Composition and Rhetoric II	3
NURS 370 Theory and Research in Clinical Practice	3
	16

### Junior year, fall semester

NURS 365 Nursing Science I	3
NURS 335 Nursing of Women	6
NURS 345 Nursing of Children	6
Humanities	3
	18

### Junior year, spring semester

NURS 366 Nursing Science II	3
NURS 325 Nursing of Adults I	6
NURS 355 Psychiatric-Mental Health Nursing	6
	15

### Senior year, fall semester

NURS 425 Nursing of Adults II	6
NURS 485 Managerial Theory for Nursing Practice	3
NURS 486 Nursing Management Practicum	2
NURS 405 Nursing Management of the Long-term Care Client	3
	14

### Senior year, spring semester

Upper division or nursing elective	3
NURS 415 Community Health Nursing	6
NURS 475 Professional Issues in Nursing	3
NURS 496 Advanced Clinical Practicum	3
	15

## R.N.-B.S. Completion Program

The general education requirements are the same for the R.N.-B.S. Completion Program. Fifty-six semester-hours of general education courses are required for graduation. The following is a typical curriculum plan for the R.N.-B.S. completion student:

### Fall semester

NURS 302 Dynamics of Professional Nursing Practice	4
--	---

NURS 261 Health Assessment for Nursing Practice	3
NURS 370 Theory and Research in Clinical Practice	3

**Spring semester**

NURS 415 Community Health Nursing	6
NURS 405 Nursing Practice in Long-Term Care	3
Upper division elective	3

**Fall semester**

NURS 485 Managerial Theory for Nursing Practice	3
NURS 486 Nursing Management Practicum	2
NURS 475 Professional Issues in Nursing	3
Upper-division credits will be awarded after successful completion of NURS 302	36

<b>Total required nursing courses</b>	<b>66</b>
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**Commuting and community practice.** Students are assigned to a variety of hospitals and health agencies. Occasionally, these assignments may be during evening hours. Transportation is sometimes available to reach these assignments, but use of an automobile is often necessary, especially in community health nursing. Transportation costs vary widely each semester and may range from very little to more than \$100. Students who anticipate need of financial assistance for transportation costs should apply to the Office of University Student Affairs/Financial Aid in advance.

## Academic regulations

### Progression

The minimum passing grade in the general education courses and the nursing major is a "C." Any nursing student who receives less than a "C" in any course must repeat the course with a "C" or better. Progression to the next level of clinical courses is based upon satisfactory completion of courses of the current year and a cumulative GPA of not less than 1.91. Courses at the next level in the nursing major without a clinical component may be taken before students officially progress to that level. Appeal of all progression issues is made to the Undergraduate Admission, Policy and Progression Committee. The clinical laboratory grading system is satisfactory or unsatisfactory. Unsatisfactory clinical application results in a grade of "F" for the course.

A student may fail a clinical course prior to the completion of the course under certain circumstances. A student whose conduct is judged to be clinically unsafe may be dismissed at any time

from a clinical unit. Unsafe clinical performance is defined as behavior that is actually or potentially injurious to patients or staff and is out of the range of ordinary student mistakes. Dismissal for the remainder of the course results in a failing grade for the course as does any failure to meet course objectives. Further, any student who has been convicted of a felony may be ineligible for licensure as a registered nurse in Virginia. Students or applicants should address any questions of this nature directly to the Virginia Board of Nursing.

There are additional requirements for satisfactory progression in the School of Nursing and all students are responsible for compliance with additional school policies, listed in the School of Nursing Policy Manual, available on the School of Nursing home page.

### Re-admission

Students dismissed from the school or university who wish to return must re-apply for admission and be considered in relation to all other applicants. The applicant must then meet all criteria for admission and graduation that apply at readmission.

### Completion of degree requirements — time limit

Once the student enrolls in the School of Nursing, the degree requirements must be completed within six calendar-years. The credentials and programs of a candidate unable to meet this requirement may be evaluated by the Undergraduate Admission, Policy and Progression Committee upon request. Such a candidate may have to meet additional requirements established during the interval since matriculation. All students must be enrolled in the School of Nursing for the final semester of study in order to graduate.

### CPR

Students entering the School of Nursing must be certified in cardiopulmonary resuscitation (CPR) before they begin their first clinical nursing course. CPR certification must include:

- one- and two-rescuer CPR,
- CPR for infants, children and adults, and
- rescue breathing for choking infants, children and adults.

Students are required to show evidence of CPR certification valid to the end of that semester to the Office of Enrollment and Student Services before the first clinical day. Those who are not certified will not be allowed to participate in the clinical laboratory and will be considered to have an unexcused absence.

### TB screening

All nursing students will have an annual TB screening. Students are required to show evidence of this annual screening. Those students who have not had their annual screening will not be allowed to participate in the clinical laboratory and will be considered to have an unexcused absence.

### Hepatitis B vaccination

All nursing students enrolled in clinical courses are required to complete the Hepatitis B vaccination series or to provide proof of a positive antibody titer. The first injection of the series must be received prior to matriculation into the School of Nursing.

### Separation from the school

A student who wishes to withdraw from the School of Nursing should discuss the plans with the associate dean for the undergraduate program. Before leaving the school, the proper forms must be obtained from the registrar and completed by the student. Failure to follow this procedure may prevent readmission to the School of Nursing at a later date.

### Graduate degree programs

The School of Nursing offers programs of study leading to the master of science, post-master's certificate and doctor of philosophy degrees.

### Master's program

The master's program is designed to offer general core content requisite for advanced practice in nursing as well as content aimed at preparation in a specialty concentration. The program is designed to prepare individuals for certification as nurse practitioners and/or clinical nurse specialists. The specialty areas are: adult health acute care, adult health primary care, child health, family health (weekday and weekend

options), nursing systems (clinical nurse manager and nurse executive), psychiatric mental health and women's health.

### Accelerated Second Degree Program

In response to the growing number of individuals with bachelor's degrees in other disciplines who are now seeking a career in nursing, the school offers a graduate program whereby an individual can earn a bachelor's and master's degree in nursing. Students in the Accelerated Second Degree Program take courses in the undergraduate and master's program until licensure as a R.N. is obtained. It is anticipated that this will occur at the end of the fifth semester. The master's degree is awarded after two to four semesters of additional study depending on the area of concentration. This program begins in the summer (see section entitled, "Master's Program").

### Post-master's Certificate Program

Individuals with a master's of science degree in nursing may take courses in the master's program in order to be eligible for the certification exam for advanced nursing practice as a nurse practitioner. The plan of study is dependent on prior master's work. Areas of study offered are: adult health, child health, family health and women's health.

### Doctoral Program

The goal of the doctoral program in nursing is the preparation of scholars to develop knowledge in the discipline of nursing. Substantive areas of study are: human health and illness, nursing systems, and biology of health and illness.

See the Graduate Bulletin for a detailed description of all graduate programs.

### Department of Adult Health Nursing

#### Patricia T. Gray

Associate Professor and Department Chair (1996)  
B.S. 1974 Tunghai University, China  
M.S. 1976 University of North Carolina, Chapel Hill  
Ph.D. 1982 University of Utah

Boyle, Anne H. (1991) Assistant Professor  
B.S.N. 1971 Duke University

M.N. 1977 University of South Carolina  
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Grap, Mary Jo E. (1984) Assistant Professor  
B.S.N. 1972 Kent State University  
M.S. 1977 University of Colorado  
Ph.D. 1986 Georgia State University  
Jablonski, Rita, Assistant Professor  
B.S.N. 1986 Holy Family College  
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N.P. 1997 University of Pennsylvania  
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## Department of Integrative Systems

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Bobbitt, Katherine C., Associate Professor Emerita  
 B.S. 1956 Medical College of Virginia  
 M.S. 1965 University of North Carolina  
 Ed.D. 1987 Nova University

Francis, Gloria M., Professor Emerita  
 B.S. 1959 Ohio State University  
 M.S. 1960 Ohio State University  
 M.S. 1970 University of Pennsylvania  
 Ph.D. 1972 University of Pennsylvania

**Courses in nursing (NURS)**

Listed below are courses in the nursing major. For all courses with a clinical laboratory, the laboratory is designed to develop the clinical and critical thinking skills needed to use the nursing process with specific population groups.

**NURS 100 Risk Appraisal and Health Promotion in Today's World.**

Semester course; 3 lecture hours. 3 credits. Offered: II.  
 Elective not limited to nursing majors. Introduces health

self-assessment and promotion in today's health care system with emphasis on risk appraisal, the influences of individual and family health beliefs and values, research, and the role of the professional nurse and other members of the health care team.

#### **NURS 201 Concepts of Nursing.**

Semester course; 3 lecture hours. 3 credits. Offered: II, S. Pre or corequisite: NURS 261. Provides a foundation for all clinical nursing courses. Content focuses on human responses to health and illness and those concepts basic to a caring relationship including nursing process, communication, patient teaching, professional responsibility, and systems. Introduces roles of technology in modern health care environments, including management of patient information.

#### **NURS 202 Technologies of Nursing Practice.**

Semester course; 6 laboratory hours. 3 credits. Offered: II, S. Pre or corequisite: NURS 201. Studies and applies techniques basic to all nursing practice. Includes cognitive, psychomotor affective and interpersonal techniques organized through the nursing process to provide nursing care based on health needs and human responses. Also, focuses on application of principles and demonstration of beginning skills in caring relationships; provides opportunities for practice and demonstration of selected skills in the laboratory and in clinical settings; and introduces tools of patient information management and patient monitoring.

#### **NURS 261 Health Assessment for Nursing Practice.**

Semester course; 2 lecture and 3 laboratory hours. 3 credits. Offered: I, S. Prerequisite: Admission to the nursing program. Provides the student with the knowledge and skills necessary to enact the first phase of the nursing process, assessment, or the collection of patient specific data and the formulation of a patient database as the foundation of the care planning process. Demonstrates specific techniques of patient interview and physical examination skills. Focuses on the healthy adult client. Introduces students to a variety of assessment framework to be used with a diversity of patient populations in acute care, ambulatory and community settings.

#### **NURS 302 Dynamics of Professional Nursing Practice.**

Semester course; 3 lecture and 1 clinical laboratory hour. 4 credits. Offered: I. Prerequisite: Admission to RN track of the undergraduate nursing program. Expands students' knowledge of concepts of nursing practice focusing on human responses to health and illness, and those concepts inherent in a caring relationship. The role of information technology in modern health care and academic environments will be introduced. This is a transition course from the student's initial education into the baccalaureate program. Successful completion of NURS 302 will validate knowledge of nursing specialties, pathophysiology, and pharmacology. The clinical component provides the opportunity for students to examine their nursing practice using theoretical frameworks and research.

#### **NURS 305 Knowledge Validation by Portfolio.**

Semester course; 3 credits. Offered: II. Culminates in submission of a portfolio for validation of course-specific knowledge and evaluation for full or partial credit. Elective. RN

students only. Involves self-assessment of prior learning for RN. Requires correlation of experiential and theoretical knowledge with objectives of selected nursing courses.

#### **NURS 325 Nursing of Adults I.**

Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Completion of 200-level required nursing courses. Focuses on the client with acute and chronic physical illnesses that have relatively stable trajectories. Examines principles of rehabilitation and concepts relevant to the care of the elderly. Provides theoretical foundations for nursing management and relates therapeutic regimens. Develops clinical decision-making and selected specialized technical skills in the provision of care to adults in a variety of settings including specialty areas such as the operating room.

#### **NURS 335 Nursing of Women.**

Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Completion of 200-level nursing course. Examines the health needs of women across the life span with an emphasis on the health needs of the childbearing family. Applies nursing process, theory and research with an emphasis on the development of critical thinking skills in the diagnosis and treatment of human responses to health needs of women, neonates and families. Practices clinical skills and applies theoretical knowledge in selected ambulatory care settings for women's health and post-discharge care, and hospital settings for antenatal, intrapartum, postpartum and neonatal experiences.

#### **NURS 345 Nursing of Children.**

Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Completion of 200-level required nursing courses. Examines the health needs of children within the context of the family system, environment, developmental capability, stress, and adaptation. Focuses on application of the nursing process, development of communication skills, and critical thinking when giving nursing care to well and ill children. Reinforces current theory and research on children and their families in clinical experiences. Reinforces standards of care for both well and ill children and their families.

#### **NURS 355 Psychiatric-mental Health Nursing.**

Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Completion of 200-level required nursing courses. Presents a systems approach to understanding psychiatric-mental health nursing. Emphasizes the art of psychiatric nursing by developing therapeutic relationships with persons who are in the mental health system. Applies science of psychiatric nursing by identifying theories used in nursing interventions. Focuses upon principles and techniques of communication with individuals and groups. Recognizes human responses to selected major mental disorders. Identifies intervention strategies for primary, secondary, and tertiary levels of prevention.

#### **NURS 365 Nursing Science I.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisite: Anatomy and physiology. Integrates the foundations of nursing diagnosis and intervention derived from

pathophysiology, biochemistry, and pharmacology for selected human systems.

#### **NURS 366 Nursing Science II.**

Semester course; 3 lecture hours. 3 credits. Pre or corequisite: Anatomy, physiology and microbiology. Integrates the foundations of nursing diagnosis and intervention derived from pathophysiology, biochemistry, and pharmacology for selected human systems.

#### **NURS 370 Theory and Research in Clinical Practice.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Completion of 200-level required nursing courses or NURS 302 for R.N.-B.S. program. Designed to promote understanding of the role of theory and research in the development of nursing as a profession. Focus on three primary areas: (1) developing the language necessary to understand theory and research; (2) analyzing the relevance of theory and research to nursing practice; and (3) beginning to understand the research process. Skill in the ability to critically read and evaluate nursing research literature for application to clinical practice will also be emphasized.

#### **NURS 402 Humanistic Haiku.**

Elective course; variable credits; 1-3. Offered: Fall or spring semester. Prerequisite: Concurrent enrollment in a course with a clinical practicum. Enrollment not limited to nursing majors. Uses observations made during clinical practice to reflect on the stress and emotional demands of caring for patients in the health care system. Approaches patients and their care from a holistic perspective. Observes how stress affects one's personal and professional life. Uses haiku literary structure as a journaling technique to integrate patient care experiences and observations.

#### **NURS 405 Nursing in Long-term Care.**

Semester course; 3 lecture hours. 3 credits. Focuses on long-term care concepts such as chronicity, disability, rehabilitation, and caregiving across the life span and their impact on the individual, the family, and the community. Addresses health care delivery systems and health policy implications in long-term care.

#### **NURS 415 Community Health Nursing.**

Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Completion of all 300-level required nursing courses. Builds on knowledge and practice skills from prior nursing education and develops nursing competencies for care of communities and targeted populations based on the core functions of public health. Concentrates on an epidemiological approach to population-focused nursing through community assessment, evaluation of the effects of contemporary issues, and health policy on the public's health. Service-learning projects directed toward disease prevention and health promotion.

#### **NURS 425 Nursing of Adults II.**

Semester course; 3 lecture and 6 clinical laboratory hours. 6 credits. Pre or corequisite: Completion of all 300-level required nursing courses. Focuses on the client in acute phases of physical illnesses and with complicated multisystem health problems. Provides theoretical foundations for

nursing management and related therapeutic regimens. Focuses on the development and application of clinical decision making in the provision of care to acutely ill adults in a variety of settings.

**NURS 475 Professional Issues in Nursing.**

Semester course; 3 lecture hours. 3 credits. Focuses on issues of professional practice by exploring the history of nursing, health care policy, codes of ethics, and legal and economic implications for nursing. Provides opportunities for students to demonstrate competence in group process.

**NURS 485 Managerial Theory for Nursing Practice.**

Semester course; 3 lecture hours. 3 credits. Focuses on principles of management as applied to nursing service units, organization of nursing services, health care systems.

**NURS 486 Nursing Management Practicum.**

2 seminar and 6 clinical laboratory hours. 2 credits. Pre (by one semester) or corequisite: NURS 485 and completion of 300-level required nursing courses. Provides opportunities to apply management principles to nursing practice in a variety of settings and specialty areas.

**NURS 487 Leadership Practicum I, II.**

Semester course; 3 credits. Prerequisite: NURS 302. Provides an opportunity for preceptorship with a nurse who is leading the profession in service, education, health policy or

research and who is not defined by position but by influence in the discipline. Provides opportunity for observation of what the leader does to plan and deliver effective innovation and analyze the effectiveness. Requires self evaluation for leadership potential and construction of a personal leadership development plan. Not appropriate for students wishing to study organizational management.

**NURS 488 Dual Discipline Study.**

Semester course; 3 lecture hours. 3 credits. Offered: S. Prerequisites: Admission to Accelerated Second Degree Program or undergraduate degree in another discipline. NURS 201. Focuses on historical and ethical foundations of nursing and their impact on current and future practice in today's political and social milieu. Includes discussion of professional behavior and health policy initiatives. Provides opportunity and synthesis of nursing and non-nursing disciplinary knowledge.

**NURS 491 Special Topics Course.**

This course has several sections, one is a Military Science section related to ROTC requirements. Military Science majors may take the course.

**NURS 492 Elective Study.**

1 to 5 credits. Prerequisite: Consent of department. Independent study projects planned to meet the learning objectives of the student.

**NURS 496 Clinical Practicum.**

Semester course; 9 clinical laboratory hours. 3 credits. Pre or corequisite: Completion of all 300-level required nursing courses. Facilitates transition into the professional role using a faculty-student-practicing nurse mentorship model. Provides opportunities for practice in a student-selected specialty area.

**NURS 497 Specialty Clinical Practice.**

Semester course; variable; 1-3 credits. Offered: I, II. Prerequisites: RN licensure and enrollment in RN-B.S. track or graduate nursing program. Completion or enrollment in 300-level courses or permission of instructor is required. Advances professional nursing clinical competence using a faculty-student-preceptor mentorship model in a student selected area of specialty clinical nursing practice.



# School of Pharmacy

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**The School of Pharmacy is devoted to preparing its students to serve its community through clerkship and research. The hands-on aspects of the curricula allow students to develop necessary professional skills while the academic lectures expose them to the latest research in medicinal chemistry, pharmaceutics, and pharmacy administration industries.**

## Professional Program

Pharmacy Pharm. D.



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 B.S. 1970 University of Cincinnati  
 Pharm.D. 1972 University of Cincinnati

**William E. Smith**

Associate Professor and Associate Dean  
 for Administrative Affairs (1997)  
 Pharm.D. 1965 University of California  
 M.P.H. 1976 University of California  
 Ph.D. 1994 Auburn University

**Andrew L. Wilson**

Associate Professor and Associate Dean  
 for Institutional Program Development (1998)  
 B.S. 1976 University of Connecticut  
 Pharm.D. 1978 Wayne State University

The School of Pharmacy of the Medical College of Virginia of Virginia Commonwealth University was officially established in 1898; the University College of Medicine had a school of pharmacy when it opened in 1893. A two-year curriculum gave way to a three-year program in 1925, and in 1932 the school required four years of college work for which a bachelor degree was awarded. The curriculum for the Bachelor of Science in Pharmacy degree was extended to five years in 1960. In 1975, the School of Pharmacy received authorization to offer advanced professional education leading to the Doctor of Pharmacy degree. The Doctor of Pharmacy Program was initially offered to small numbers of highly qualified students who already had the bachelor of science in pharmacy degree or who had completed four of the five years of the bachelor of science program. In 1995, a revised six-year Doctor of Pharmacy Program curriculum was adopted and offered as a replacement for the bachelor of science program which was then discontinued. The School of Pharmacy currently enrolls students in a four-year professional Doctor of Pharmacy Program

curriculum following completion of at least two years of pre-professional studies taken elsewhere. In 1996 a part-time Doctor of Pharmacy Program was offered that permits current bachelor of science in pharmacy degree holders to earn the doctor of pharmacy degree in a nontraditional format which requires students to come to campus infrequently.

Since 1971, all pharmacy students have participated in a clerkship program. Students spend their final year in a variety of practice settings under the supervision of highly qualified faculty preceptors.

The authority to award graduate degrees in the pharmaceutical sciences was granted by the Graduate Council in 1952. Departments in the school direct work leading to the master's and doctor of philosophy degrees in the pharmaceutical sciences with emphasis in medicinal chemistry, pharmaceutics or pharmacy administration.

## Philosophy

In developing the curriculum of the School of Pharmacy, the faculty recognizes that an educated person should be prepared to assume a responsible and rewarding role in society. The new paradigm of pharmaceutical care guides the school's curriculum committee and faculty in the design and implementation of the curriculum. Pharmaceutical care is the responsible provision of drug therapy by the pharmacist for the purpose of achieving definite outcomes that improve a patient's quality of life. In professional practice pharmaceutical care focuses on the pharmacist's attitudes, behaviors, commitment, concerns, ethics, functions, knowledge, responsibilities and skills in the provision of drug therapy which achieves outcomes that yield improvement in a patient's quality of life. The educational program is designed to provide a sound, scientific and professional background for both those who will enter the practice of pharmacy directly and those who wish to continue graduate education in the pharmaceutical sciences. It also includes courses in the arts and humanities in order to provide the student with a broad educational base which will permit participation in community life, not only as a professional, but also as an informed, concerned citizen. The professional curriculum is rigorous and

highly demanding of the student's time; employment must not be allowed to interfere with the educational process. The faculty has adopted a document entitled "Expected Competencies of Doctor of Pharmacy Graduates" and has expanded these competencies into knowledge, skills and attitudes that have been implemented in the curriculum.

## Mission and goals

The School of Pharmacy of Virginia Commonwealth University fully supports the mission and goals of the university and the MCV Campus. The school's mission statement, goals and objectives are in concert with those of the university and the MCV Campus and are reflective of the school's specific responsibilities.

The School of Pharmacy provides educational programs in the pharmaceutical sciences leading to the doctor of pharmacy, master of science and doctor of philosophy degrees. The school is responsible for educating individuals who will provide quality pharmaceutical care, as well as individuals who will provide quality scholarship, leadership and service in the pharmacy and pharmaceutical sciences arenas at the local and national levels.

The mission of the school is to provide organized professional pharmacy curricula based on the principles of pharmaceutical care, graduate curricula in the pharmaceutical sciences, and postgraduate training programs. The professional curricula should provide a sound scientific and professional education for those individuals who will enter the practice of pharmacy directly so that they can assume responsibility for the outcomes of drug and related therapy in patients. The professional curricula should provide a broad educational base, including courses in the arts and humanities, so as to prepare the graduate to participate in community life as a professional and as an informed and concerned citizen. The graduate curricula should provide courses which explore the latest knowledge and theories in the pharmaceutical and related sciences, and extensive research experiences. The graduate curricula should prepare the graduate to innovate and lead in the pharmaceutical sciences at the national and international level.

The goals of the School of Pharmacy are as follows:

- I. Provide organized pharmacy curricula that will prepare individuals to deliver quality pharmaceutical care.
- II. Provide special courses and programs for those who seek additional education in pharmacy.
- III. Provide quality graduate education that prepares the graduate to innovate and lead in the pharmaceutical sciences at the national and international level.
- IV. Cultivate an awareness of professional demeanor and ethics in students and faculty.
- V. Encourage excellence in scholarship among students.
- VI. Develop and assure excellence in teaching.
- VII. Promote research and scholarly activity in the pharmaceutical sciences and related disciplines.
- VIII. Encourage the performance of service responsibilities to the university, school, department, profession and broader community.
- IX. Foster the concept and importance of lifelong learning.
- X. Assume a proactive role in the development and evaluation of pharmacy practice.
- XI. Promote faculty development.
- XII. Recruit highly qualified students.
- XIII. Foster relations with alumni, the public, and health professionals.
- XIV. Manage the school's resources and programs in an effective manner.
- XV. Value and promote diversity among students, faculty, and staff; attend to the diverse needs of students.

### Career opportunities

Graduation from the School of Pharmacy affords the opportunity to pursue one of several career paths. The most familiar role is as a provider of pharmaceutical care to ambulatory patients in a community setting. In this setting the pharmacist may be self-employed or may be an employee of an organization such as an independent pharmacy, a corporate chain of pharmacies, or a managed care pharmacy in a health maintenance organization.

Many pharmacists also practice in institutional settings such as hospitals or other health care institutions.

The pharmaceutical industry also employs pharmacists in several areas including manufacturing, quality control, research, sales, and as medical service representatives who call on physicians. Opportunities also are available in various government services, including the public health service and Veterans Affairs, as well as in government-operated laboratories.

In most cases, those who aspire to engage in independent research or to teach seek graduate degrees in the pharmaceutical sciences or in specialty fields related to pharmacy.

### Facilities

The School of Pharmacy is located in the Robert Blackwell Smith Jr., Building at 12th and East Clay streets. This building, which is named in honor of a distinguished former dean of pharmacy, president of the Medical College of Virginia of VCU, and provost of the MCV Campus of Virginia Commonwealth University, was completed in 1984 with the help of contributions from many alumni and friends of the School of Pharmacy.

Classes for students in pharmacy also are conducted in Sanger Hall, located between 11th and 12th streets on East Marshall Street. This building houses several departments of the School of Medicine which provide basic sciences instruction for pharmacy students. Students receive clinical experience in the MCV Hospitals of Virginia Commonwealth University and other clinics. Other facilities available for teaching include area hospitals and pharmacies. The major library holdings are in the Tompkins-McCaw Library at 12th and East Clay streets.

### Accreditation

The Doctor of Pharmacy program is fully accredited by the American Council on Pharmaceutical Education. The school is a member of the American Association of Colleges of Pharmacy.

### Programs

#### Professional

The school offers the doctor of pharmacy degree through two program pathways. Students who do not have a B.S. degree in pharmacy enroll in the first professional program which is

completed in four years of full-time study at the school following completion of the two-year minimum pre-pharmacy requirements. Students holding the bachelor of science in Pharmacy degree who wish to upgrade their professional skills and degree enroll in a program which can be completed through part-time study in a nontraditional program.

### Graduate

The school offers programs of graduate study leading to the degrees of master of science and doctor of philosophy. Students may specialize in pharmacokinetics, pharmaceuticals, medicinal chemistry, biopharmaceutical analysis or pharmacy administration.

Interested students with graduate study potential should consult the appropriate department chair. Information on procedures and policies for graduate studies can be found in the Graduate Bulletin.

### Licensing and reciprocity

The Virginia Board of Pharmacy holds qualifying examinations for licensure on an ongoing basis throughout the year. Applicants for the examination must present evidence that their first professional degree was granted by a school of pharmacy recognized by the board. This school is among those recognized. Applicants must also present evidence of completion of 1,500 hours of practical experience. Completion of the school's Pharm.D. Program satisfies 1,200 hours of this requirement.

Those students who intend to be licensed in Virginia should contact the Virginia Board of Pharmacy, 6606 W. Broad St., Suite 400, Richmond, VA 23230-1717.

Virginia has reciprocal licensing agreements with all states except California and Florida.

### Doctor of Pharmacy Program admission requirements

Applicants for admission to the School of Pharmacy must attend an accredited college for at least two academic years (six quarters or four semesters) and complete the specified course requirements prior to admission.

Students planning to seek a degree in pharmacy upon high school graduation should plan their high school program to meet the requirements for

admission in the college where they will take the prerequisite work for admission into the VCU School of Pharmacy.

The minimal admission requirements are listed. (Meeting these requirements does not, however, guarantee acceptance into the VCU School of Pharmacy.)

- A. A statement affirming the applicant's good moral character signed by one or more pharmacists, physicians, or former teachers may be requested by the Admissions Committee.
- B. An official transcript and official transcripts from all colleges attended. Applications are considered by the Admissions Committee only after transcripts on file show completion of no less than two semesters or three quarters of college work. When offered, an acceptance is contingent upon satisfactory completion of specific work that may be in progress.
- C. Applicants must offer the required credits in the following subject areas for a total of at least 68 semester-hours (102 quarter-hours).

	Semester Hours	Quarter Hours
Biology (lecture and laboratory)	8.0	12.0
General chemistry (lecture and laboratory)	8.0	12.0
Organic chemistry (lecture and laboratory)	8.0	12.0
Physics (lecture and laboratory)	8.0	12.0
English	6.0	9.0
Mathematics (at least 3 semester- hours or 4.5 quarter-hours must be calculus)	6.0	9.0
Statistics or ethics	3.0	4.5
Public speaking	3.0	4.5
Electives	18.0	27.0
	<hr/> 68.0	<hr/> 102.0

Credits earned through Advanced Placement Tests of the College Board are not acceptable in meeting the total 68 semester-hours requirement. Such AP credits may excuse a student from taking a specific nonscience course such as English, but the credits must be made up through additional electives. AP credits in science (e.g., biology, chemistry) or mathematics (e.g., calculus) must

be made up with courses in kind. Generally, this requirement is achieved by taking advanced-level courses (e.g., physical chemistry as a substitute for AP credit in general chemistry).

Dual credit courses taken during high school may be considered acceptable for transfer credit pending review of college transcripts.

All elective credits must be in liberal arts or behavioral sciences (natural sciences, physical education, or studio course credits are not accepted).

Credits earned in gross human anatomy, biochemistry, microbiology or physiology are part of the curriculum of the School of Pharmacy and therefore are not acceptable in meeting the prerequisites.

In unusual cases, students may be admitted subject to completion of course credit prior to graduation.

- D. Applicants must have earned a creditable average ("C" or better) overall, and in the courses specified, to meet minimum academic requirements for admission.
- E. Applicants for admission must submit a completed application form; this form requires that the names of four individuals be given who are qualified to assess the applicant's ability to complete the curriculum in pharmacy. The list of names must include at least two teachers (preferably in the sciences) and a health care provider. The fourth name should be a current or former employer.
- F. The dean and the committee on admissions may require a personal interview with the applicant.
- G. Applicants are required to take the Pharmacy College Admission Test before admission.
- H. Applicants whose first language is not English should submit scores from the Test of English as a Foreign Language (TOEFL), the Test of Spoken English (TSE) or other proof that the applicant's command of English is sufficient to allow successful completion of all of the requirements of the program.
- I. Students are admitted only at the start of the academic year. An

applicant must complete one full year of the academic prerequisites before an application can be reviewed. The Admissions Committee begins reviewing applications during October of the year preceding admission. It is to the applicant's advantage to apply during the fall of the year before expected enrollment in the School of Pharmacy. Applicants are accepted pending satisfactory completion of all prerequisite courses. Notification usually occurs in early spring.

- J. Prior to enrolling, successful applicants must meet the immunization requirements set forth in the "General Information" section of this bulletin. Prior to entering the fourth professional year, students must provide proof of immunity to hepatitis B, a negative PPD test, and satisfy all other university immunization requirements.

The following criteria are considered in judging applicants:

- college attended,
- academic workload carried,
- college overall GPA,
- chemistry, biology and math proficiency,
- outside activities and achievements in high school and college,
- Pharmacy College Admission Test (PCAT) scores,
- written and oral communication skills,
- extent of exposure to pharmacy practice,
- extent of exposure to other health disciplines, and
- personal interview.

Time demands for this full-time program are rigorous. In general, the first three years require a Monday-Friday (8 a.m.-6 p.m.) commitment for lectures, conferences, laboratories and off-campus visits to area pharmacy practice sites. The fourth year is devoted to experiential learning at sites located throughout Virginia. Students enrolling in the four-year professional degree program must agree to the possibility of being assigned to sites beyond the Richmond-metropolitan area (e.g., eastern, northern or western Virginia). Candidates must assess personal obligations prior to seeking application.



VCU does not discriminate against qualified applicants for admission who have disabilities, and seeks to provide reasonable accommodation to applicants and admitted students who identify themselves as having disabilities. Academic requirements essential to the program or to directly related licensing requirements will not be substituted. Upon acceptance into the program, students in need of accommodation may contact the MCV Campus coordinator for students with disabilities at (804) 828-9782 to discuss their needs.

Further information and application materials may be obtained by writing to the Chair, Admissions Committee, School of Pharmacy, Virginia Commonwealth University, P.O. Box 980581, Richmond, VA 23298-0581. Applicants also may call a toll-free telephone number, 1-888-212-9287 for assistance.

## Doctor of Pharmacy Program curriculum

### First professional year

First semester	credits
ANAT 505 Anatomy	3.0
MEDC 501 Medicinal Chemistry I	2.0
BIOC 523 Biochemistry I	2.0
PCEU 503 Principles of Pharmacy	4.0
PCEU 517 Pharmacy Skills Laboratory I	1.0
PHAR 521 Pharmacy and Health Care Systems	2.5
PHAR 525 Pharmacy Communications	2.0
PHAR 557 Pharmacy Practicum I	0.5
	<hr/>
	17.0

### Second semester

BIOC 524 Biochemistry II	3.0
PHIS 506 Physiology and Pathophysiology	5.0
MICR 501 Microbiology	3.5
PCEU 506 Biopharmaceutics and Pharmacokinetics	4.0
PCEU 518 Pharmacy Skills Laboratory II	1.0
PHAR 558 Pharmacy Practicum II	0.5
	<hr/>
	12.0

### Second professional year

#### First semester

PHTX 603 Pharmacology I	3.0
MEDC 602 Principles of Pharmaceutical Analysis	2.0
MEDC 603 Medicinal Chemistry II	2.5
PCEU 617 Pharmacy Skills Laboratory III	1.0
PHAR 627 Principles of Pharmacy Practice Management	4.5

PHAR 643 Pharmacotherapy I	3.5
PHAR 657 Pharmacy Practicum III	0.5
	<hr/>
	17.0

#### Second semester

PHTX 604 Pharmacology II	4.0
MEDC 604 Medicinal Chemistry III	2.5
PCEU 606 Applied Pharmacokinetics	2.5
PHAR 644 Pharmacotherapy II	4.5
PHAR 658 Pharmacy Practicum IV	0.5
Elective(s)	2.0-3.0
	<hr/>
	16.0-17.0

### Third professional year

#### First semester

PHAR 701 Pharmacy Ethics	2.0
PHAR 743 Pharmacotherapy III	3.0
PHAR 745 Drug Literature Evaluation I	4.0
PHAR 747 Physical Assessment	1.0
PHAR 757 Pharmacy Practicum V	0.5
Elective(s)	5.0-6.0
	<hr/>
	15.5-16.5

#### Second semester

PHAR 718 Pharmacy Skills Laboratory IV	1.0
PHAR 724 Pharmacy Law	3.0
PHAR 744 Integrated Therapeutics	3.0
PHAR 748 Self-Medication Awareness and Community Health	3.0
PHAR 758 Pharmacy Practicum VI	0.5
Elective(s)	5.0-6.0
	<hr/>
	15.5-16.5

### Fourth professional year

PHAR 760 Acute Care Rotation	5.0
PHAR 761 Hospital Practice Rotation	5.0
PHAR 762 Long-Term Pharmaceutical Care Rotation	5.0
PHAR 763 Primary Ambulatory Care Rotation	5.0
PHAR 764 Community Pharmaceutical Care Rotation	5.0
PHAR 765 Elective Rotation I	5.0
PHAR 766 Elective Rotation II	5.0
PHAR 767 Elective Rotation III	5.0
	<hr/>
	40.0

Approximately half of the students in the fourth professional year may be obliged to travel and reside some distance from Richmond to participate in pharmacy practice clerkships. No refund of payments for tuition, fees, or other expenses may be expected by the students since credit is granted for the time spent in this phase of the program. No stipends may be earned by the students in connection with any professional practice program for which the school grants credit.

## Nontraditional Pathway Doctor of Pharmacy Program admission requirements

Applicants for this program must hold a bachelor of science in Pharmacy degree and a current license to practice pharmacy in the United States.

Prior to enrolling, successful applicants must meet the immunization requirements set forth in the "General Information" section of this bulletin. Prior to beginning the practice rotations students must provide proof of immunity to hepatitis B.

VCU does not discriminate against qualified applicants for admission who have disabilities, and seeks to provide reasonable accommodation to applicants and admitted students who identify themselves as having disabilities. Academic requirements essential to the program or to directly related licensing requirements will not be substituted. Upon acceptance into the program, students in need of accommodation may contact the MCV Campus coordinator for students with disabilities at (804) 828-9782 to discuss their needs.

## Nontraditional Pathway Doctor of Pharmacy Program curriculum

The recommended course work totals 48 credits: 18 credits for didactic courses and 30 credits for clinical clerkships. Waivers for up to nine didactic credits and 20 clerkship credits may be made based on the student's professional practice portfolio or testing out of didactic courses.

The prerequisite course in biostatistics may be taken from VCU faculty. Or, credit may be granted for an equivalent course taken within the past five years. To determine course equivalency, a course syllabus and transcript of the final grade must be submitted for review.

The Professional Practice Evaluation Workshop is to explain the process for the preparation and submission of a portfolio of practice experience and what has been learned from these practice experiences. The portfolio will be used by the program committee for decisions of waiver of clinical experience credits.

Clinical experience (clerkships) may be taken full time or part time at a minimum of 10 hours per week. Clerkships may be completed in the

student's practice site if adequate access to patients is available.

#### Didactic and Experiential Components

##### Recommended

Professional Practice Evaluation Workshop	
Required courses — didactic	credits
Evaluation of Drug Literature and Information Sources	3
Clinical Pharmacokinetics	3
Physical Assessment	1
Advanced Pharmacotherapeutics I	4
Advanced Pharmacotherapeutics II	4
Assessment of Pharmacy Services	3
	<hr/>
	18

##### Required courses — experiential

Clinical Experience I	5
Clinical Experience II	5
Clinical Experience III	5
Clinical Experience IV	5
Clinical Experience V	5
Clinical Experience VI	5
	<hr/>
	30

### Academic regulations

Matriculation in the School of Pharmacy implies a willingness on the part of students to comply with university rules and regulations and to conduct themselves in a manner befitting members of the profession the students seek to enter. The program of study and regulations regarding courses of study, student conduct, etc., are subject to modification without notice. All rules and regulations set forth in this bulletin, as well as other statements issued by administrative officers of the university, apply until further notice.

#### Probation

Students may be placed on probation by either the Committee on Admissions or the Academic Performance Committee. Probation is a status indicating that the student's scholarship is deficient and is expected to be improved to a level considered to be satisfactory by the faculty. Students who fail to meet probationary stipulations may expect to have their normal progress through school interrupted. They may be required to attend summer school, to repeat a year, or to withdraw. Students on probation are not eligible to be nominated for offices in the student government nor to

represent the school in athletics or other extracurricular activities. Students on probation are expected to stop, or drastically curtail, any outside employment. Each student who is placed on probation receives a letter in which the details of that individual's probation are described.

#### Outside work

In general, the faculty believes that students should give first priority to their school work. Students able to maintain academic standing are not restricted with respect to outside employment. Students in academic difficulty will be advised to cease or drastically curtail any outside employment.

#### Honor code

All students are governed by the honor code and regulations of the student body organization. A detailed description of the Honor Council's rules of procedure is available upon request.

#### Faculty advising program

Each student in the School of Pharmacy is assigned a faculty adviser who can assist the student with academic and personal problems. The faculty adviser also serves as the student's mentor in the pharmacy practicum. Students usually remain with the same adviser throughout their attendance in the School of Pharmacy.

There is a faculty adviser to the Interfraternity Council as well as an adviser for each of the professional pharmacy fraternities.

Each of the student chapters of professional pharmacy organizations on campus operates with a faculty adviser.

#### Attendance regulations

The following regulations apply specifically to students enrolled in the Doctor of Pharmacy Program in all of their required and elective courses offered by departments in the School of Pharmacy and to required basic science courses offered by the School of Medicine. In courses in which these regulations apply, other students enrolled with pharmacy students also are subject to the regulations.

1. The faculty considers class attendance at lectures to be an important component in the successful acquisition of knowledge and

skills required of the Doctor of Pharmacy candidate. Students are strongly encouraged to attend all classes and conferences. An individual faculty member may require attendance in his or her course and establish penalties for those who are absent without an excuse from the dean's office.

2. Attendance at laboratory and prelaboratory classes is mandatory. Students must complete all laboratory assignments before a passing grade can be assigned. An excused absence from the dean's office is required for missing a laboratory or prelaboratory class with the ability to make up the work with credit. Students without an approved absence are still required to make up the work but will not receive credit toward their course grade.
3. Students must take tests (e.g., quizzes, laboratory practicals, examinations) and complete all other assignments at the time designated by the course coordinator. Students must recognize that faculty may give unannounced tests at any time during a course, consistent with documentation in a course syllabus. Students who miss any test in any course without an excused absence from the dean's office will receive a grade of zero for the specific test.
4. Attendance during each assigned clerkship period is mandatory. If a student is unable to attend to required clerkship responsibilities because of illness or other exceptional circumstances, the preceptor must be notified immediately. It is the responsibility of the student to also notify the program director concerning a plan to make up the absence, with the approval of the preceptor. Documentation of the absence and approval to make up the absent time will be maintained in the student's record.
5. Absences may be excused under certain conditions. Requests for excuses for unavoidable absences must be submitted to the dean's office, on an Absence Record form, within 24 hours of returning to the School of Pharmacy. The student must complete the Absence Record form with an

explanation for the absence. Further explanation, if necessary, may be provided to the associate dean for admissions and student services. It is a violation of the honor code to make false or misleading statements on the Absence Record form. In the event of an unexcused absence, the student is responsible for all work missed.

6. A guiding principle in determining whether or not an absence will be excused is that the absence is caused by circumstances beyond the student's control. The following are considered valid excuses for being absent from a class or clerkship.

- a. **Illness, a medical emergency, a dental emergency.**

The school normally accepts the student's judgement that the condition was serious enough to justify the absence from class; however, the school reserves the right to require a medical opinion, particularly if the period of absence is prolonged or is repetitive. The school will require a written medical opinion when a student is absent from taking a scheduled test or final examination. If the absence is a result of a medical emergency, the student will be required to sign a written release for the school to obtain documentation from their physician describing the exact nature of the illness or emergency. This record will be submitted to the associate dean for admissions and student services as a confidential document.

- b. **Death of a relative or friend.** Students will be excused from class to attend funerals. Absence beyond the day of the funeral will be excused for periods of mourning required by a student's religious or cultural tradition, or when a student is too grief-stricken to return immediately to class.

- c. **Mandatory court appearance.**

- d. **Mandatory religious observances.** Students who anticipate absences from class

because of religious obligations should submit a list of their anticipated absences at the beginning of each semester to the dean's office. The student must also submit an absence form following each absence.

- e. **Failure of private, public or university transportation.**

Students are expected to take reasonable precautions to assure that the transportation method used is fully functional (e.g., maintaining personal automobile, avoiding the last possible return airline flight to Richmond). Proof of transportation failure will be required.

- f. **Attendance at professional meetings.** Students in good academic standing may receive an excused absence from class to attend a meeting of a professional pharmacy organization. The student must complete an Absence Record form in advance of attending a professional meeting. A policy statement containing eligibility criteria is distributed to all students.

7. Tardiness is a form of absence which may also be excused using the criteria mentioned above. Students arriving late for a test may be given the test without an excused absence but will not be allowed extra time beyond the scheduled termination of the test. Once a student has completed the test and left the room, late arriving students will not be permitted to take the test unless the absence is excused.
8. Absences that are not reported within 24 hours after the student returns to school will be considered unexcused. It is not the responsibility of a faculty member to determine whether an absence is excused. This determination will be made by the dean's office.
9. Students are expected to make every effort to keep abreast of their assignments during an absence. They should also be prepared to take tests upon their return to the school or at the discretion of the faculty member after considering the student's academic schedule. If, in the opinion of the dean's office, the nature

of a student's absence made it impossible for that student to prepare for a test, the student will be granted an extension for taking the test.

10. A faculty member should not give a make-up test before confirming that a student's absence has been excused. The faculty member usually provides an equivalent make-up test within a reasonable period of time. The type and format of the make-up exam will be determined by the faculty member. Within the framework of the honor code, it may be possible to administer the same examination if administered no more than 48 to 72 hours after the originally scheduled examination. Any make-up examination should be scheduled as soon as possible to avoid impeding the student's academic progress.

## Promotion

Attending pharmacy school is not a right acquired simply by conforming with the entrance requirements and paying tuition and fees. For this reason the dean and the Academic Performance Committee require that marginal or failing performance be improved or that the student withdraw from school. "D" grades are indicative of marginal performance. Careful consideration is given during the promotions process not only to the student's grades but also to his or her probity, industry, and scholastic ability.

These guidelines delineate the course of action to be taken by the committee. Decisions regarding individual students will be made in accordance with these guidelines. Consideration will be given to pertinent information and extenuating circumstances for individual cases. The following statements present the prominent features of the promotions process.

1. Students are evaluated for progress at the end of each semester. The Academic Performance Committee assesses student progress for each of these periods. At the end of the fourth year the entire faculty will decide whether or not students have satisfied all requirements for graduation. Promotion decisions are based on achievement during the year

under review and on the student's overall progress.

2. Students who have passed the work of an academic year with grades of "C" or better in all courses will ordinarily be advanced to the next higher class.
3. The Academic Performance Committee for the year involved thoroughly reviews the academic record of each student who fails to pass a course, receives a "D" grade, does not maintain a grade-point average of 2.0 or better for the year or semester in question, or is on probation. Following this review, the committee may recommend promotion on a probationary basis, require a repeat of all or a part of previous work or terminate the student's enrollment.
4. Students who fail two or more courses during the program will be dismissed.
5. A student who earns "D" grades for six credits or more of class work in any year and/or a GPA of less than 2.0 in any year will be subject to academic probation, dismissal or may be asked to repeat the year.
6. Students will be subject to academic probation, dismissal, or may be asked to repeat the year if they earn more than one "D" or "F" grade in any one of the following sequences of related courses: basic health sciences, medicinal chemistry, pharmacy and pharmaceuticals, pharmacotherapeutics and pharmacy administration.
7. Students who fail to meet conditions of probation will be required to withdraw or repeat a year's work. Students will not be allowed to repeat more than one year of the curriculum.
8. A student must have passed all courses from the first three years of the curriculum to qualify for entry into the final year of the program.

### Withdrawal

Students finding it necessary to withdraw from the School of Pharmacy must comply with the provisions for withdrawal in Part VI of this bulletin.

The dean of the School of Pharmacy will not approve a request for withdrawal until the student has submitted a letter of resignation.

Students withdrawing without approval and failing to check out laboratory lockers will be assessed a fee and any charges resulting from the need to replenish the contents of the lockers.

### Re-admission

Students seeking re-admission to the School of Pharmacy will be evaluated on their total academic record. Applicants for readmission to the first professional year will not be given priority over new applicants but must compete with them on an equal basis. Re-admission in advanced standing will be considered on a space-available basis.

### Graduation

Students are recommended and approved for the doctor of pharmacy degree by the faculty of the School of Pharmacy.

Candidates must meet the following requirements:

1. Be of good moral character.
2. Complete satisfactorily all the required work in a timely fashion, which will not normally exceed five years from the date of initial enrollment.
3. Pay all fees.
4. Complete the last year's work for the degree in residence in this school.
5. Be present at the commencement exercises unless excused in advance by the dean in writing.
6. Complete satisfactorily the minimum number of required clerkship rotations and demonstrate the attainment of minimum competencies.

### Honors and awards

#### Rho Chi

This national honorary pharmaceutical society established Lambda Chapter at the School of Pharmacy in 1929.

Charters for chapters of this organization are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy. Election to membership in the society is based on high attainment in scholarship, character, personality, and leadership. Students become eligible for consideration during the second professional year of the pharmacy program.

Lambda Chapter annually awards certificates in recognition of outstanding scholarship to students who have completed the pre-pharmacy and first professional year pharmacy curriculum. Also, Lambda Chapter selects one member of the fourth professional year class who is recognized for excellence in scholarship, leadership, personality and character. The name is inscribed on a plaque displayed in the School of Pharmacy.

#### Phi Lambda Sigma

This national pharmacy leadership society established a Beta Nu Chapter at the School of Pharmacy in 2000. Charters for chapters of this organization are granted only to groups in colleges that are members in good standing of the American Association of Colleges of Pharmacy and which are accredited by the American Council of Pharmaceutical Education.

Election to membership in the society is based on the demonstration of dedicated service and leadership in the advancement of pharmacy and evidence of high moral and ethical character.

#### Dean's award

This award, named in honor of Dean Emeritus John S. Ruggiero, is sponsored by the Rosenthal Foundation and consists of a recognition certificate and an honorarium. The recipient is a graduating student selected by the dean for outstanding achievement and unselfish devotion to his or her class, the school, the university and the profession.

#### Virginia Pharmacists Association Research and Education Foundation Award

An award presented to the graduating student who has exhibited the ideals of professionalism and excellence in patient care throughout their academic pharmacy career.

#### APhA-ASP Professionalism Award

An award recognizing professionalism and excellence in patient care by a graduating student. The recipient must demonstrate exceptional service and commitment to the profession through involvement in professional organizations and other extracurricular learning opportunities.

**Patient Care Award**

An award recognizing a graduating student who best demonstrates the ability to apply clinical knowledge into practical patient care.

**Excellence in Pharmacy Award**

An award presented to a graduating student with high academic achievement, professional motivation and the intent to enter practice upon graduation.

**Community Pharmacy Internship Award**

An award recognizing a graduating student with the demonstrated qualities and abilities necessary to practice community pharmacy.

**Clinical Research Award**

An award recognizing the clinical research contributions of a graduating student.

**Pharmacy Communications Award**

An award presented to a graduating student with demonstrated effectiveness in communicating with patients.

**Achievement Award**

An award presented to a graduating student with demonstrated leadership qualities.

**The Edward E. Willey Pharmacy Scholarship Award for Outstanding Scholarship and Leadership**

This award, which memorializes a distinguished alumnus and dedicated public servant, is presented annually to a rising fourth professional year student who is determined by a committee of faculty to be outstanding in character, as judged by faculty and classmates; leadership ability, as demonstrated by participation in and leadership of student organizations; and academic performance, as demonstrated by the attainment of a 3.75 grade-point average during the first three years in pharmacy school. The award consists of payment of tuition, fees, and a stipend.

**Linda Nixon Harvey Memorial Scholarship**

This endowed award is presented annually to a rising fourth professional year student who has maintained high

academic standards in college while exhibiting leadership, professional integrity and outstanding personal qualities.

**Jacobs Memorial Scholarship Fund**

This endowed award is available annually to pharmacy students in financial need as recommended by the dean of the School of Pharmacy.

**David D. Marshall Memorial Scholarship**

This endowed award is presented annually to a married fourth professional year student who ranks academically in the top half of the class and who has a demonstrated financial need.

**M. Bruce Rose Scholarship**

This endowed award is presented annually to a student from the Virginia Pharmacists Association's Third District.

**Glenn B. Updike, Sr. Scholarship Fund**

This endowed fund is available, upon recommendation of the dean of the School of Pharmacy, to students who have financial need and scholastic ability. Special preference shall be given to applicants who are residents of Danville, Va.

**Laura Butler Memorial Scholarship**

This endowed award is presented annually to a pharmacy student in need of financial aid.

**Samuel and Gilbert Rosenthal Foundation Scholarship**

This endowed award is presented annually to pharmacy students in need of financial aid.

**William S. Cooper Scholarship**

Established in honor of the first African-American to graduate from the School of Pharmacy, this endowed scholarship is awarded annually to qualified African-American students.

**William W. and Patsy S. Gray Scholarship**

Established from a bequest from Mr. W. W. Gray, this endowed scholarship is

awarded to qualified pharmacy students.

**Nick G. Nicholas Memorial Award**

This endowed award was established "to benefit pharmacy students" and may be used for a variety of purposes including scholarships.

**Carolyn Coleman (Stone) Student Fund**

Established by friends and family of Carolyn Coleman, this endowed fund is to be used to assist with needs of pharmacy students, including tuition assistance and financial support of student projects.

**Warren Weaver Endowment Fund**

Established to honor this former dean of pharmacy, this fund is used to provide funds to enhance teaching and research programs and student activities.

**W. Roy Smith Memorial Scholarship**

This endowed scholarship is awarded annually to a senior pharmacy student demonstrating academic talent, strong leadership ability, and involvement in community activities.

**Organizations****Virginia Academy of Students of Pharmacy**

Students in the School of Pharmacy have an opportunity to become members of this organization which is affiliated with the Virginia Pharmacists Association and the American Pharmaceutical Association. The group meets regularly presenting programs of interest to the student body.

**Student Chapter Virginia Society of Health-System Pharmacists**

Pharmacy students who are interested in the practice of pharmacy in organized health care settings may become members.

**Student National Pharmaceutical Association**

This student subdivision of the National Pharmaceutical Association works to define the future role of minority health professionals in the community.

## Student Association of Community Pharmacists

This student organization focuses on issues of interest to students who plan to pursue careers in community pharmacy. It is affiliated with the National Community Pharmacists Association.

## Student Chapter of the Academy of Managed Care Pharmacists

This student organization serves the interests of students who plan to pursue a career in the managed care practice environment.

## Professional fraternities

Chapters of Phi Delta Chi, Kappa Psi, and Kappa Epsilon are active within the student body. These fraternities extend invitations, according to the rules of the Interfraternity Council, to pharmacy students to become members. Eligibility for consideration is based upon academic achievement as determined by the Interfraternity Council and the dean's office.

## Financial aid

See Part III of this bulletin.

## Courses of instruction

Enrollment in courses included in the doctor of pharmacy curricula summarized on the preceding pages requires the approval of the dean of the School of Pharmacy unless the student has been admitted to the Doctor of Pharmacy Program.

## Department of Medicinal Chemistry

### Donald J. Abraham

Professor and Department Chair (1988)  
B.S. 1958 Pennsylvania State University  
M.S. 1959 Marshall University  
Ph.D. 1963 Purdue University

Desai, Umesh R. (1998) Assistant Professor  
B.S. 1983 University of Baroda  
M.S. 1985 Indian Institute of Technology  
Ph.D. 1991 Indian Institute of Technology  
Dukat, Malgorzata (1994) Assistant Professor  
M.S.C. 1983 Technical University  
Ph.D. 1989 Academy of Medicine  
Glennon, Richard A. (1975) Professor  
B.S. 1967 Northeastern University  
M.S. 1969 Northeastern University  
Ph.D. 1973 State University of New York

Kellogg, Glen E. (1988) Assistant Professor  
B.S. 1979 University of New Mexico  
Ph.D. 1985 University of Arizona  
Kier, Lemont B. (1977) Professor  
B.S. 1954 Ohio State University  
Ph.D. 1958 University of Minnesota  
May, Everett Lee\* (1977) Professor of Medicinal Chemistry and Pharmacology and Toxicology  
B.A. 1935 Bridgewater College  
Ph.D. 1939 University of Virginia  
Reynolds, Kevin A. (1997) Associate Professor  
B.S. 1978 University of Southampton  
Ph.D. 1987 University of Southampton  
Rife, Jason P. (1998) Assistant Professor  
B.S. 1987 University of Tampa  
Ph.D. 1994 University of South Florida  
Scarsdale, J. Neel\* (1988) Assistant Professor of Medicinal Chemistry and Biochemistry and Molecular Biophysics  
B.S. 1982 University of Arkansas  
Ph.D. 1989 Yale University  
Soine, William H. (1978) Associate Professor  
B.S. 1970 University of Minnesota  
M.S. 1975 University of Kansas  
Ph.D. 1978 University of Kansas  
Westkaemper, Richard B. (1982) Associate Professor  
B.S. 1974 University of California  
M.A. 1978 University of Kansas  
Ph.D. 1980 University of Kansas  
Wright, Christine S.\* (1980) Professor of Medicinal Chemistry and Biochemistry and Molecular Biophysics  
B.S. 1965 University of Indiana  
Ph.D. 1969 University of California, San Diego  
Young, Richard (1990) Assistant Professor  
B.S. 1975 University of Cincinnati  
M.S. 1977 and Ph.D. 1981 Virginia Commonwealth University

### Adjunct faculty

Joshi Safo

### Affiliate faculty

May Rice  
Rzeszutski Scarsdale  
Wright, C. Wright, H.

### Visiting lecturers

Blaney Goodford  
Lotter Martin  
Perutz

### Emeriti faculty

Andrako, John, Professor Emeritus  
B.S. 1947 Rutgers University  
M.S. 1949 Rutgers University  
Ph.D. 1953 University of North Carolina  
Boots, Marvin R., Associate Professor Emeritus  
B.S. 1958 St. Louis College of Pharmacy  
M.S. 1960 University of Wisconsin  
Ph.D. 1963 University of Kansas  
Richard, Alfred J., Professor Emeritus  
B.S. 1953 Lowell Technical Institute  
M.A. 1955 Clark University  
Ph.D. 1958 Clark University

Smith, J., Professor Emeritus  
B.S. 1942 University of Virginia  
M.S. 1949 University of Virginia  
Ph.D. 1946 University of Virginia  
Stubbins, James F., Professor Emeritus  
B.S. 1953 University of Nevada  
M.S. 1958 Purdue University  
Ph.D. 1965 University of Minnesota  
Weaver, Warren E., Professor Emeritus  
B.S. 1942 University of Maryland  
Ph.D. 1947 University of Maryland  
Windridge, Graham C., Associate Professor Emeritus  
Pharm.D. 1965 University of California, San Francisco  
Ph.D. 1969 University of California, San Francisco

\* Joint appointment

## Courses in medicinal chemistry (MEDC)

### MEDC 310/CHEM 310 Medicinal Chemistry and Drug Design.

Semester course; 3 lecture hours. 3 credits. Prerequisite: One year of organic chemistry. This course is designed to expose undergraduate chemistry, biology, and pre-medicine majors to the history, theory, and practice of medicinal chemistry. The course will emphasize a combination of fundamentals and applications of drug design. In particular, the molecular aspects of drug action will be discussed. Special emphasis will also be placed on the methods used by medicinal chemists to design new drugs.

### MEDC 501 Medicinal Chemistry I.

Semester course; 4 lecture hours per week for 8 weeks. 2 credits. Offered: I. This course integrates the chemical and physical properties of organic molecules with biological effects. Particular emphasis is placed on heterocyclic chemistry, mechanisms of drug decomposition, mechanisms of enzymatic reactions, and stereochemistry as they relate to drug action and biodisposition. Molecular physico-chemical phenomena are described which pertain to biological events.

### MEDC 526 Research Techniques in Medicinal Chemistry.

Semester course; 0-2 lecture and 2-8 laboratory hours. 1-4 credits. The theory and application of classical, instrumental, and computer techniques used in medicinal chemistry research are presented.

### MEDC 532 Medicinal Chemistry for Nurse Anesthetists.

Semester course; 4 lecture hours. 4 credits. A review of the principles of organic chemistry and bio-organic chemistry presented as a series of lectures covering the structure-activity relationships, metabolism, and mechanism of action of selected agents.

### MEDC 601 Advanced Medicinal Chemistry I.

Semester course; 1 lecture hour. 1 credit. Offered: I. Introduces the general concepts important in medicinal chemistry, including drug dynamics, drug macromolecule interactions, drug design and quantitative structure-activity relationships.

**MEDC 602 Principles of Pharmaceutical Analysis.**

Semester course; 1.5 lecture and 1 laboratory hours. 2 credits. Offered: I. A study of the underlying principles and practical limitations of analytical procedures with emphasis on techniques most applicable to the quantization of substances in biological fluids. The laboratory work usually involves the testing and evaluation of over-the-counter analytical products currently sold or used in pharmacies. Emphasis is also placed on the clinical applications and interpretations of measuring endogenous and exogenous chemicals present in biological fluids. This course includes material related to both statistics and ethics.

**MEDC 603 Medicinal Chemistry II.**

Semester course; 2.5 lecture hours. 2.5 credits. Offered: I. A study of the general principles of drug action at the molecular-level. Emphasis is placed on physical, chemical, and biochemical properties of drug substances, the relationships between chemical structure and pharmacological activity, the molecular basis for drug-receptor interactions, and drug metabolism. A major goal is to prepare students so that they may more readily assimilate and apply new information about existing and future therapeutic agents.

**MEDC 604 Medicinal Chemistry III.**

Semester course; 2.5 lecture hours. 2.5 credits. Offered: II. Prerequisite: MEDC 603. A study of the general principles of drug action at the molecular-level. The philosophy and goals of MEDC 603 are applied to the discussion of therapeutic classes of agents not covered in MEDC 603.

**MEDC 610 Advanced Medicinal Chemistry II.**

Semester course; 2 lecture hours. 2 credits. Offered: II. Prerequisites: MEDC 601 or the permission of the instructor. Introduces concepts for understanding the medicinal chemistry of the central nervous system.

**MEDC 620 Advanced Medicinal Chemistry III.**

Semester course; 2 lecture hours. 2 credits. Offered: II. Prerequisite: MEDC 601 or the permission of the instructor. Reviews the concepts necessary for enzyme inhibitor design. Emphasizes the design of new agents to treat disease states by enzyme inhibition.

**MEDC 630 Theoretical Methods in Drug Design.**

Semester course; lecture and laboratory hours. 2 credits. Prerequisites: MEDC 601, MEDC 610 or 620, or permission of instructor. A study of the theoretical methods of drug structure-activity analysis, including molecular orbital theory, topological indexes and physical property correlations. Computational chemistry problems will be emphasized in the laboratory.

**MEDC 641 Survey of Molecular Modeling Methods.**

Semester course; lecture and laboratory hours. 1 credit. Introduces computational chemistry and molecular graphics with the current software used for drug design and small molecule/large molecule interactions. Computational chemistry problems will be emphasized in the laboratory.

**MEDC 642 Nucleoside, Nucleotide, Carbohydrate and Peptide Chemistry.**

Semester course; 1 lecture hour. 1 credit. Surveys nucleoside,

nucleotide, carbohydrate and peptide chemistry with emphasis on their synthesis.

**MEDC 643 Regioselective Drug Metabolism.**

Semester course; 1 lecture hour. 1 credit. Surveys drug biotransformation reactions. Emphasizes the molecular aspects of Phase I and Phase II drug metabolism.

**MEDC 644 Asymmetric Synthesis.**

Semester course; 1 lecture hour. 1 credit. Reviews the major asymmetric chemical transformations, including mechanisms, scope and synthetic utility.

**MEDC 645 Introduction to Heterocyclic Chemistry.**

Semester course; 1 lecture hour. 1 credit. Introduces the chemistry of heterocyclic compounds. Emphasizes heterocyclic nomenclature and the reactions/reactivity of heterocyclic systems.

**MEDC 670 Advanced Molecular Modeling Theory and Practice.**

Semester course; 3 lecture/laboratory hours. 3 credits. Prerequisite: MEDC 641 or permission of instructor. Examines the principles and application of computational chemistry and molecular graphics to current problems in drug design. Lectures focus on the application of specific computational methods and techniques to solve problems in drug/molecular design. Workshop sessions provide hands-on experience using state-of-the-art hardware and software for molecular modeling.

**MEDC 690 Departmental Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Reports presented by students, staff, and visiting lecturers, current problems and developments in pharmaceutical and medicinal chemistry are discussed.

**MEDC 691 Special Topics in Medicinal Chemistry.**

Semester course; 1-4 lecture hours. 1-4 credits. Lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as a part of the research training.

**MEDC 697 Directed Research in Medicinal Chemistry.**

Semester course; 1-15 credits. Research leading to the M.S. or Ph.D. degree.

## Department of Pharmacy

**Charles C. Pulliam**

Professor and Department Chair (1999)  
B.S. 1968 Northeast Louisiana University  
M.S. 1971 Northeast Louisiana University  
Pharm.D. 1998 University of North Carolina

Ancell, Caroline J. (1999) Assistant Professor  
Pharm.D. 1995 University of Florida

Ballentine, Rollin L. (1987) Associate Professor  
B.S. 1971 University of Cincinnati  
Pharm.D. 1973 University of Michigan

Brasfield Jr., Kenneth H. (1988) Assistant Professor  
B.S. 1976 Mercer University

Pharm.D. 1978 Mercer University  
Brophy, Donald (1996) Assistant Professor  
B.S. 1992 North Dakota State University  
Pharm.D. 1994 North Dakota State University  
Brophy, Gretchen T. (1996) Assistant Professor  
Pharm.D. 1994 University of Arizona  
Carroll, Norman V. (1989) Professor  
B.S. 1976 University of North Carolina, Chapel Hill  
M.S. 1979 University of North Carolina, Chapel Hill  
Ph.D. 1982 University of North Carolina, Chapel Hill  
Comstock, Thomas J. (1982) Associate Professor  
B.S. 1977 Ohio State University  
Pharm.D. 1979 University of Utah

Crouch, Michael A. (1996) Assistant Professor  
B.S. 1992 University of North Carolina, Chapel Hill  
Pharm.D. 1995 Medical University of South Carolina  
Delafuente, Jeffrey C. (1998) Professor  
B.S. 1973 University of Florida  
M.S. 1976 University of Florida

Dunn, Erin C. (1998) Assistant Professor  
Pharm.D. 1996 University of Arizona  
Exum, Barbara J. (1982) Assistant Professor  
B.S. 1982 Virginia Commonwealth University  
Pharm.D. 1986 Virginia Commonwealth University  
Ford, George D.\* (1969) Professor of Physiology

B.S. 1961 West Virginia University  
M.S. 1964 University of Iowa  
Ph.D. 1967 West Virginia University  
Garnett, William R. (1976) Professor  
B.S. 1969 Virginia Commonwealth University  
Pharm.D. 1973 Philadelphia College of  
Pharmacy and Science

Goode, Jean-Venable R. (1989) Assistant Professor  
B.S. 1986 Virginia Polytechnic Institute and State University  
B.S. 1989 Virginia Commonwealth University  
Pharm.D. 1994 Virginia Commonwealth University  
Goram, Adrian (1996) Assistant Professor  
Pharm.D. 1985 Florida A & M University  
Gray, Elizabeth S. (1994) Assistant Professor  
B.S. 1987 George Mason University  
B.S. 1990 Medical College of Virginia of Virginia  
Commonwealth University  
Ph.D. 1992 Medical College of Virginia of Virginia  
Commonwealth University

Griffith, Frank A. (1998) Director of Development  
B.A. 1960 University of Pittsburgh

Hansen, Lea Ann (1985) Associate Professor  
B.S. 1979 University of North Nebraska  
Pharm.D. 1983 University of Nebraska

Hill, Lilian H. (1999) Assistant Professor  
B.S. 1982 University of Alberta  
M.Ed. 1987 University of Toronto  
Ph.D. 1999 University of Georgia

Holdford, David A. (1995) Assistant Professor  
B.S. 1980 University of Illinois  
M.S. 1991 Ohio State University  
Ph.D. 1995 University of South Carolina

Hong, Song H. (1999) Assistant Professor  
B.S. 1983 Seoul National University  
M.S. 1985 Seoul National University  
M.S. 1985 University of Texas  
Ph.D. 1997 University of Texas

James, Vivien E. (1996) Assistant Professor  
 B.S. 1989 University of South Carolina  
 Pharm.D. 1992 Medical University of South Carolina

Kennedy, Daniel T. (1996) Assistant Professor  
 B.S. 1991 University of Minnesota  
 Pharm.D. 1995 University of Minnesota

Kirkwood, Cynthia K. (1985) Assistant Professor  
 B.S. 1982 Virginia Commonwealth University  
 Pharm.D. 1985 Virginia Commonwealth University

Kirkwood, Craig F. (1984) Associate Professor  
 B.S. 1980 State University of New York, Buffalo  
 Pharm.D. 1983 State University of New York, Buffalo

Krieg Jr., Richard J.\* (1975) Professor of Anatomy  
 B.S. 1967 University of San Francisco  
 M.S. 1969 University of California, Los Angeles  
 Ph.D. 1975 University of California, Los Angeles

McKenney, James M. (1972) Professor  
 B.S. 1965 Hampden-Sydney College  
 B.S. 1968 Virginia Commonwealth University  
 Pharm.D. 1972 Wayne State University

Miederhoff, Patrick A. (1985) Associate Professor  
 B.S. 1963 St. Louis College of Pharmacy  
 M.S. 1971 University of Louisville  
 Pharm.D. 1974 University of Kentucky  
 Ph.D. 1985 University of New Orleans

Morgan, Harvey B. (1997) Director of Alumni Affairs  
 B.S. 1952 Hampden-Sydney College  
 B.S. 1955 Virginia Commonwealth University

O'Neal, Charles H.\* (1968) Associate Professor of  
 Microbiology and Immunology  
 B.S. 1957 Georgia Institute of Technology  
 Ph.D. 1963 Emory University

Palmer, Shirley M. (1997) Assistant Professor  
 B.S. 1990 Virginia Commonwealth University  
 Pharm.D. 1992 Philadelphia College of Pharmacy and  
 Science

Patrick, Graham A.\* (1973) Professor  
 B.S. 1969 University of North Carolina  
 Ph.D. 1973 Tunghai University

Polk, Ronald E. (1976) Professor  
 B.Ph. 1971 Washington State University  
 Pharm.D. 1974 University of Michigan

Pugh, Carol B. (1992) Associate Professor  
 B.S. 1977 College of William and Mary  
 B.S. 1982 Medical College of Virginia of Virginia  
 Commonwealth University  
 Pharm.D. 1984 Medical College of Virginia of Virginia  
 Commonwealth University

Pyles, Michael A. (1983) Assistant Professor  
 B.A. 1977 University of Florida  
 M.A. 1979 University of Florida  
 Ph.D. 1990 Virginia Commonwealth University

Reinders, Thomas P. (1974) Associate Professor and  
 Associate Dean  
 B.S. 1970 University of Cincinnati  
 Pharm.D. 1972 University of Cincinnati

Rose, S. Rutherford (1999) Associate Professor  
 B.A. 1978 University of Virginia  
 B.S. 1983 Virginia Commonwealth University  
 Pharm.D. 1986 Philadelphia College of  
 Pharmacy and Science

Ruffin, David M. (1995) Assistant Professor

Pharm.D. 1994 University of South Carolina

Shelton, Keith R.\* (1970) Professor of Biochemistry and  
 Molecular Biophysics  
 B.A. 1963 University of Virginia  
 Ph.D. 1968 University of Illinois

Shuford, Veronica P. (1999) Assistant Professor  
 B.S. 1990 Virginia Commonwealth University  
 M.Ed. 1996 Virginia Commonwealth University

Slatum, Patricia W. (1996) Assistant Professor  
 B.S. 1985 Virginia Commonwealth University  
 Pharm.D. 1992 Virginia Commonwealth University  
 Ph.D. 1992 Virginia Commonwealth University

Small, Ralph E. (1975) Professor  
 B.S. 1973 University of Toronto  
 Pharm.D. 1975 Duquesne University

Small, Sharon Stevens (1986) Assistant Professor and  
 Director of Continuing Studies and External Affairs  
 B.S. 1976 University of Kentucky  
 Pharm.D. 1990 University of Kentucky

Smith, William E. (1997) Associate Professor of Pharmacy  
 and Pharmaceutics and Associate Dean  
 Pharm.D. 1965 University of California  
 M.P.H. 1976 University of California  
 Ph.D. 1994 Auburn University

Wheeler, Mark T. (1997) Assistant Professor  
 B.S. 1989 Virginia Commonwealth University  
 Ph.D. 1994 Virginia Commonwealth University

Williams, Melissa I. (1999) Assistant Professor  
 B.S. 1994 Virginia Commonwealth University  
 Pharm.D. Virginia Commonwealth University

Wilson, Andrew L. (1998) Associate Professor, Director of  
 MCVH Pharmacy, and Associate Dean for Clinical  
 Affiliations  
 B.S. 1976 University of Connecticut  
 Pharm.D. 1978 Wayne State University

Yunker, Nancy S. (1985) Assistant Professor  
 B.S. 1983 Purdue University  
 Pharm.D. 1984 Purdue University

#### Affiliate faculty

Susla

#### Clinical faculty

Adams	Allen, C.
Altonen	Anama
Arnold	Aust
Baggett	Bahlman
Ballentine, L.	Barbatti
Bartels	Bass
Baumhover	Bazunga
Becker	Berringer
Berryman	Bird
Blanchard	Blevins
Bocwinski	Brackbill
Bradley	Bragg
Brasfield	Bridgers
Brink	Broderick
Brokaw	Broussard
Brower	Brusig
Buck	Buddie
Bullock	Calis
Carlson	Carson

Case	Caturano
Chang	Chatelain
Chenault	Chernitzer
Chicoine	Cimmino
Clary	Clay, A.
Clay, D.	Cole
Colgan	Conboy
Cooksey	Counts
Cox	Creecy
Cundiff	Davis, C.
Davis, K.	Davis, L.
Davis, N.	Davis, R.
Dawson	Dugger
Duke	Duncan
Duong	Dupree, L.
Dupree, M.	Edwards
Elliott	Emswiller
Ersland	Farrar
Farrelly	Fennell
Fenstermacher	Ferraro
First	Flint
Fulco	Gendron
George	Giles
Gilley	Gilmer
Goldwater	Gordon
Gouldin	Grasmick
Guanci	Gumpper
Gutshall	Hageman
Hall	Hamilton
Hancock	Harman
Harris	Harrow
Hasty	Hawley
Herbert	Hilburger
Hodges	Holder
Holroyd	Huff
Huffman	Hughes
Humphries	Ingram
Iranmanesh	Ivey
Jennings	Jinkins
Johnson	Johnston
Jones, A.	Jones, C.
Kale	Kamrad
Kelly	Knick
Knight	Kolb
Kotter	LeBel
Lee	Lenihan
Liberto	Lipps
Lockridge	Lucas
Mallon	Marks, E.
Marks, R.	Marshall
Mason	McClure
McDearmon	McDowell
McFadden	Merrill
Miller, L.	Miller, W.
Mink	Mongold
Morikawa	Morrow
Moussavian-Yousefi	Mulkey
Munden	Muniz
Nangia	Nash
Necary	Nelms
Neufer	Ngo
Nguyen	Nuckols



O'Brian	OgdenOley
Orr	Ostosky
Parker	Patterson
Peard	Pedigo
Peery	Perdue
Petryna	Pickard
Pierce	Pigue
Pingle	Poremba
Posner	Potter
Powers	Presley
Pugh, M.	Rapp
Reece	Reider
Rex	Rice
Rich	Richard
Riegert	Roberts
Robertson	Rock
Roddy	Rodgers
Rosner	Rumble
Russell	Sandberg
Schraa	Scott
Seaman	Sebastian
Sharp	Silek
Silvester	Sim
Simmons	Sisson
Smith, C.	Smith, D.
Smith, H. J.	Smith, J. K.
Smoot	Snead
Snider	Spellman
Stallings	Stanley
Stark	Stiltner
Stewart	Stoneburner
Swartz	Swiger
Szalwinski	Tam
Tarasidis	Targos
Taylor	Thompson
Tidwell	Tiffany
Tisdell	Trimble
Tullio	Vincent
Walpole	Waters
Weakley	Weaver
Weisiger	Westley
Wiatt	Williams, G.
Wilmot-Pater	Wyant
Zigmont	

**Emeriti faculty**

Fiske, Russell H., Associate Professor Emeritus B.S. 1939 University of Michigan
Hilliard, Norman L., Assistant Professor Emeritus B.S. 1953 and M.Ed. 1970 Virginia Commonwealth University
Ruggiero, John S., Professor Emeritus B.S. 1952 St. John's University M.S. 1954 Duquesne University Ph.D. 1958 University of Connecticut
Stepka, William, Professor Emeritus B.A. 1946 University of Rochester Ph.D. 1951 University of California, Berkeley
White, C. Eugene, Associate Professor Emeritus B.S. 1950 Medical College of Virginia J.D. 1962 University of Richmond

\* Joint appointment

**Courses in pharmacy (PHAR)****PHAR 521 Pharmacy and the U.S. Health Care System.**

Semester course; 2.5 credits. Offered: I. This course introduces students to the American health care system and acquaints them with the features of that system that directly influences the practice of pharmacy and the provision of pharmaceutical care. The course pays particular attention to pharmacy as a profession, the practice of pharmacy, and the delivery of pharmaceutical care in a complex environment by considering the structure, function, and associated policy considerations of the health care delivery system. The course also provides a general overview of the health care delivery system. The course also provides a general overview and an intensive analysis of interrelationships among health care consumers, providers, organizational arrangements, and regulatory and reimbursement mechanisms. The course includes material related to statistics and ethics.

**PHAR 525 Communication in Pharmacy.**

Semester course; 1.5 lecture and the average of 1 conference hour per week. 2 credits. Offered: I. A study of the theory and techniques of communication and counseling techniques related to pharmacy practice. Supervised practice in developing basic communication skills.

**PHAR 541 Pharmaceutical Ethics.**

Semester course; 2 lecture hours. 2 credits. A study of the current practice and philosophy of pharmacy. Graded as pass/fail.

**PHAR 557, 558 Pharmacy Practicum I, II.**

Semester courses; 6 conference hours, 14 experiential hours per semester. .5 credit. Offered: I, II. These courses are the first of a six-semester sequence. Students will have direct contact with patients and pharmacy practice sites to allow understanding of the effect of illness and medication on patients and the impact of pharmaceutical care services. Graded as honors or pass/fail.

**PHAR 627 Principles of Pharmacy Practice Management.**

Semester course; 4.5 lecture hours. 4.5 credits. Offered: I. This course describes social, behavioral, and financial theories pertinent to the management of pharmacy practices in community, hospital and other settings. Emphasis will be placed on marketing and pharmacoeconomic concepts applied to the practice of pharmacy.

**PHAR 631 Advanced Hospital Pharmacy Management I.**

Semester course; 3 lecture hours. 3 credits. Classical, social, and systems views of management are introduced with emphasis on the uses of implicit control. The sociology of professions and the nature of professional work are explored; the management of the professional's work is discussed in detail. Design and operation of integrated drug information, drug distribution, and drug use control systems is explored.

**PHAR 632 Advanced Hospital Pharmacy Management II.**

Semester course; 3 lecture hours. 3 credits. The planning and

development of a total program in institutional drug use control is stressed with emphasis on modern human and fiscal resource management theories and applications. Current management problems unique to institutional pharmacy practice are stressed.

**PHAR 635 Advanced Pharmacotherapeutics and Adverse Drug Reactions I.**

Semester course; 3 lecture and 6 laboratory hours. 6 credits. The rational therapeutic choices of drugs with respect to pathophysiological considerations of diseases are emphasized. Clinical application of biopharmaceutics, pharmacokinetics, therapeutics, drug interactions, adverse drug reactions, laboratory findings, and other factors affecting drug efficacy in the context of the total care of the patient is stressed. Detection, clinical evaluation, and management of adverse drug reactions is also emphasized. Students receive advanced instruction in therapeutics and pathophysiology and learn to apply drug knowledge to problem solving using selected patient cases.

**PHAR 636 Advanced Pharmacotherapeutics and Adverse Drug Reactions II.**

Semester course; 3 lecture and 6 laboratory hours. 6 credits. A continuation of PHAR 635.

**PHAR 637 Case Management Conference.**

Semester course; 2 lecture hours. 2 credits. Students present and analyze patient cases and selected therapeutic topics from their advanced practice rotations. Emphasis is placed on drug therapy in the context of the total management of the patient with multiple medical problems.

**PHAR 638 Therapeutic Case Challenge.**

Semester course; 2 lecture hours. 2 credits. Students discuss and debate subtleties and controversies in the drug therapy of patients encountered in their practice rotations.

**PHAR 643 Pharmacotherapy I.**

Semester course; 3 lecture and 0.5 conference hours. 3.5 credits. Offered: I. The pathophysiology, clinical presentation, clinical course, prevention, and pharmacotherapy of disease states are presented. The detection of drug-related problems in the provision of pharmaceutical care using problems or patient cases is introduced. Problem-solving and communication skills are enhanced in small group conferences.

**PHAR 644 Pharmacotherapy II.**

Semester course; 4 lecture and 0.5 conference hours. 4.5 credits. Offered: II as a continuation of PHAR 643. The pathophysiology, clinical presentation, clinical course, prevention, and pharmacotherapy of disease states are presented. Clinical pharmacology, applied clinical pharmacokinetics, techniques for assessing drug-related problems, monitoring and optimizing pharmacotherapy using subjective and objective patient data are emphasized. Large group discussions are introduced. Problem-solving and communication skills are enhanced in small group conferences.

**PHAR 650 Drug Literature Evaluation.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. A study, at the advanced-level, of the techniques used to

retrieve and evaluate clinical drug literature. Research methods and research design are taught to better prepare the student to evaluate published research.

#### **PHAR 657, 658 Pharmacy Practicum III, IV.**

Semester courses; 6 conference hours, 14 experiential hours per semester. .5 credit. Offered: I, II. This course focuses on the skills needed to solve problems and deliver pharmaceutical care. Skills taught in other courses and laboratory sessions will be reinforced and refined in the experience component of this course. Graded as honors or pass/fail.

#### **PHAR 670 Genetic Pharmacotherapy.**

In this course, students will learn the sociobehavioral and therapeutic aspects of providing health care to elderly people. Problems associated with drug use in the elderly and the importance of providing quality pharmaceutical care to ambulatory and institutionalized geriatric individuals will be emphasized.

#### **PHAR 671 Applied Pharmacoeconomics and Outcomes Research.**

Semester course; 3 lecture hours. 3 credits. Prerequisite: Permission of instructor. Presents theoretical and practical topics relating to pharmacoeconomics and health outcomes research. Students will learn to critically appraise and discuss pharmaceutical outcomes research through lectures, readings, class participation and projects. Requires students to plan, initiate and present an outcomes research project that considers both clinical and economic issues of product or service selection.

#### **PHAR 672 Advances in Mental Health Pharmacy Practice.**

Semester course; 1 lecture and 3 clinical hours. Students choose the topics for discussion in this elective course. They actively learn through small group discussions of the pharmacotherapy of psychiatric disorders. Students gain experience in patient rounds, practice-based projects, interpretation of clinical practice guidelines, use of the Internet and computer presentations.

#### **PHAR 673 Advanced Oncology Therapeutics.**

This course builds upon material learned in Pharmacotherapy and Drug Literature Evaluation. Didactic lectures include topics such as advanced pharmacology concepts of antineoplastic agents, treatment strategies and controversies for various malignancies, the role of stem cell and bone marrow transplantation, treatment of oncology emergencies and the role of the pharmacist in cancer screening, treatment and palliative care. The experiential activities include patient care experiences and projects for cancer-related service organizations.

#### **PHAR 674 Advances in Community Pharmacy Practice and Therapeutics.**

Semester course; 2 lecture and 1 conference hour. 3 credits. Offered: I. This course will enable students to enhance their community practice and patient care skills. It will address strategies for marketing and documentation of clinical services including disease management, wellness and screening programs pertinent to community pharmacy practice. Students will visit community pharmacies for the practice component of this course.

#### **PHAR 675 The Pharmacist's Role in Alternative Medicine.**

Semester course; 3 lecture hours. 3 credits. Offered: I. With the expanding use of natural products and other alternative medicine modalities, the pharmacist is confronted with a need to be knowledgeable of these areas so that he or she may more effectively provide guidance to patients. This course is a study of commonly used natural products and other alternative therapies (e.g., homeotherapy, healing touch, osteopathic medicine).

#### **PHAR 676 Veterinary Pharmacotherapy.**

Semester course; 2 lecture hours. 2 credits. Offered: I. This course explores the unique aspects of drug action in nonhuman species and treatment of common veterinary problems.

#### **PHAR 690 Pharmacy Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Required of all graduate students in pharmacy. Research seminar.

#### **PHAR 691 Special Topics in Pharmacy.**

Semester course; 1-5 lecture hours. 1-5 credits. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

#### **PHAR 692 Clerkship Training.**

Semester course; 1-4 credits. This course is designed to train Pharm.D. students to teach pharmacy students in clinical practice sites.

#### **PHAR 693-696 Advanced Practice.**

Semester course; 3-15 credits. Enrollment in any of these courses requires the permission of the director of the Pharm.D. program. A series of elective and required planned experiences to permit Pharm.D. students to utilize their knowledge of the pharmaceutical sciences in a variety of practice settings. Each course consists of one or more month-long rotations, each carrying three semester-hours of credit. Rotations within a course offer different experiences under the same or a different instructor. Rotations are offered in the following areas: inpatient medicine, primary ambulatory care, specialty ambulatory care, drug information, infectious disease, mental health, department program management, management support programs, clinical inpatient program management, clinical outpatient program management, pediatrics, pharmacotherapeutic consultation, pharmacokinetic consultation, nutritional support.

#### **PHAR 697 Directed Research in Pharmacy.**

Semester course; 1-15 credits. Research leading to the M.S., Pharm.D., or Ph.D. degree.

#### **PHAR 701 Pharmacy Ethics.**

Semester course; 1.5 lecture and average of 1 conference hour per week. 2 credits. Offered: I. This course includes an overview of basic ethical principles and relates them to the practice of pharmacy. It introduces different perspectives on approaches to addressing ethical dilemmas in pharmacy practice and presents the tools for decision making.

#### **PHAR 718 Pharmacy Skills Laboratory IV.**

Semester course; 3 laboratory hours. 1 credit. Offered: II. This competency-based course challenges students in selected clinical applications in pharmacy practice.

#### **PHAR 724 Pharmacy Law.**

Semester course; 3 lecture hours. 3 credits. Offered: II. A study of federal and state laws, including statutes, regulations and cases, affecting the practice of pharmacy and the distribution of drugs. This course includes material on ethics.

#### **PHAR 743 Pharmacotherapy III.**

Semester course; 2.5 lecture and 0.5 conference hours. 3 credits. Offered: I. The pathophysiology, clinical presentation, clinical course, prevention and treatment of disease states are presented. Clinical pharmacology, applied clinical pharmacokinetics, techniques for assessing drug-related problems, and monitoring and optimizing pharmacotherapy are emphasized. Problem-solving and communication skills are enhanced in small group conferences.

#### **PHAR 744 Integrated Therapeutics.**

Semester course; 2 lecture and 2 conference hours. 3 credits. Offered: II. Patient cases serve as the basis for active student learning of the pathophysiology, clinical presentation, clinical course, prevention, and pharmacotherapy of disease states. The rational therapeutic choice of drugs with respect to multiple disease states is emphasized. Collection of patient data, assessment of drug-related problems, development of recommendations, and establishment of monitoring parameters are emphasized. Clinical application of pharmacology, biopharmaceutics, pharmacokinetics, therapeutics, drug interactions, adverse drug reactions, laboratory findings, and other factors affecting drug efficacy in the context of disease state management are also stressed. Student participation in large and small group discussions is an essential component of this course.

#### **PHAR 745 Drug Literature Evaluation I.**

Semester course; 4 lecture hours. 4 credits. Offered: I. This course in the evaluation of drug literature contains material related to biostatistics. Lecture topics include research design, concepts and principles of clinical trials, evaluation of case reports and primary literature, appropriate use of statistics, and inferential statistics (parametric and nonparametric). Exercises include efficient use of drug information resources, critique of pharmaceutical advertising, and development of professional written communication skills.

#### **PHAR 747 Physical Assessment.**

Semester course; 1 lecture hour per week. 1 credit. Offered: I. A study of basic physical assessment through lectures, audiovisual aids, readings, and hands-on practice. Emphasis is placed on patient interviewing techniques, physical examination skills, and the application of these skills to evaluating drug therapy and achieving desired therapeutic goals.

#### **PHAR 748 Self-Medication Awareness and Community Health.**

Semester course; 2.5 lecture and an average of 1 conference hour per week. 3 credits. Offered: II. This course describes and utilizes skills for assessing the necessity of

using nonprescription therapy, including alternative medicines, for the medical problems encountered. Problem solving, hands-on workshops to learn about home-monitoring, case presentation, and didactic lectures will all be used to conduct the course. The course includes material related to everyday prevention of disease and evaluation of patient data.

#### **PHAR 757, 758 Pharmacy Practicum V, VI.**

Semester courses; 6 conference hours, 14 experiential hours per semester. 0.5 credit. Offered: I, II. Students will learn to integrate the patient care skills learned in PHAR 657-658 into the pharmaceutical care services provided to assigned patients in hospital and ambulatory settings. Students identify drug-related problems, develop and execute patient care plans to address these problems, monitor and interpret the results of these plans and document services in health records. Graded as honors or pass/fail.

#### **PHAR 760 Acute Care Rotation.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will participate in the delivery of pharmaceutical care to hospitalized patients with an ongoing clinical pharmacy program. Students may participate in adult medicine, family practice or specialty medicine. Students will participate in the following types of activities: rounding, obtaining patient histories, identifying problems requiring therapeutic interventions, solving problems, consulting with physicians, monitoring patient outcomes and providing educational sessions for the professional staff. These services are expected to be integrated with the continuum of hospital pharmacy services.

#### **PHAR 761 Hospital Practice Rotation.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will participate in the hospital pharmacy department's delivery of pharmacy services including drug preparation, dispensing, drug distribution, administration and quality assurance. Students will participate in dosage form development, IV admixtures, unit dose dispensing, documentation, quality assurance and related services.

#### **PHAR 762 Long-Term Care Rotation.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will participate in the delivery of care and services to patients residing in resident halls, adult homes and/or nursing homes. Student activities will include drug preparation and distribution as well as the consultant activities that include drug monitoring and review of patient care.

#### **PHAR 763 Primary Ambulatory Care Rotation.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will participate in the delivery of pharmaceutical care in a primary care, multidisciplinary practice in which there is an ongoing clinical pharmacy program. These sites may include community pharmacies, hospital clinics, physician group practices, and managed care facilities. Students will be involved in obtaining patient histories, evaluating drug therapies, assessing patient's response to therapy, identifying drug related problems, developing pharmacy care plans, monitoring the patient's

therapeutic outcome, consulting with physician and non-physician providers and providing patient education. If this site offers dispensing services, the student will be involved with drug delivery to the patient.

#### **PHAR 764 Community Ambulatory Care Rotation.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will participate in all facets of pharmacy practice in the community pharmacy setting. Students will be involved in dispensing, compounding, telephone consultation, patient counseling and nonprescription drug recommendations. Students will also be involved in patient assessment, monitoring intervention and follow-up care designed to improve the outcomes of drug therapy.

#### **PHAR 765 Rotation I.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will be involved in activities that involve analysis and provision of drug and medication use information for the improvement of patient outcomes. This experience will be available in a variety of settings including hospital drug information centers, hospital pharmacies providing the same information without a formal drug information center designation and pharmacy benefit management firms which are involved in drug utilization review, prescriber education and advice, and development of disease management protocols.

#### **PHAR 766, 767 Elective Rotation II, III.**

Semester course; daily for 5 weeks. 5 credits. Offered: I, II, S. In this course, students will be able to participate in a variety of pharmacy practice settings.

### **Department of Pharmaceutics**

#### **Peter R. Byron**

Professor and Interim Chair (1988)  
B.S. 1970 University of Manchester  
Ph.D. 1973 University of Manchester

Barr, William H. (1972) Professor and Eminent Scholar  
B.S. 1960 University of California, San Francisco  
Pharm.D. 1961 University of California, San Francisco  
Ph.D. 1966 University of California, San Francisco  
Coaker, Jean S. (1992) Research Assistant  
B.S. 1977 James Madison University  
Hindle, Michael (1997) Research Associate Professor  
B.S. 1989 University of Bradford, UK  
Ph.D. 1992 University of Bradford, UK  
James, John R. (1988) Research Assistant  
B.S. 1987 University of Oregon  
M.S. 1991 Virginia Commonwealth University  
Ph.D. 1992 Virginia Commonwealth University  
Karnes, H. Thomas (1984) Professor and Associate Dean  
AAS 1974 Illinois Central College  
B.S. 1977 Illinois State University  
M.S. 1980 University of Florida  
Ph.D. 1984 University of Florida  
Kirkpatrick, Mary Ann (1983) Assistant Professor  
B.S. 1968 University of North Carolina, Chapel Hill  
M.S. 1991 Virginia Commonwealth University  
Ph.D. 1997 Virginia Commonwealth University

March, Clark L. (1987) Research Assistant Professor  
B.S. 1972 Georgia Institute of Technology  
M.S. 1983 Virginia Commonwealth University  
Peart, Joanne (1996) Visiting Assistant Professor  
B.S. 1991 University of Bath  
Ph.D. 1996 University of Bath  
Poyner, Wesley J. (1980) Associate Professor and  
Director of Information Technology  
B.S. 1972 University of Texas, Austin  
B.S. 1974 University of Texas, Austin  
Ph.D. 1980 University of Texas, Austin  
Sarkar, Mohamadi A. (1998) Associate Professor  
B.S. 1981 University of Bombay  
M.S. 1985 University of Bombay  
Ph.D. 1990 Virginia Commonwealth University  
Venitz, Jurgen (1988) Associate Professor  
M.D. 1980 Universitat Des Saarlandes, Germany  
Ph.D. 1986 Universitat Des Saarlandes, Germany  
Wu-Pong, Susanna (1993) Assistant Professor  
B.S. 1986 University of Texas, Austin  
Ph.D. 1992 University of California, San Francisco  
Yanchick, Victor A. (1996) Professor of Pharmacy and Dean  
B.S. 1962 University of Iowa  
M.S. 1966 University of Iowa  
Ph.D. 1968 Purdue University

#### **Emeriti faculty**

Smith, Harold L., Associate Professor  
B.S. 1956 Medical College of Virginia  
Ph.D. 1962 Medical College of Virginia  
Wood, John H., Professor Emeritus  
B.S. 1946 University of Manitoba  
M.S. 1947 Ohio State University  
Ph.D. 1950 Ohio State University

### **Courses in pharmaceutics (PCEU)**

#### **PCEU 503 Principles of Pharmacy.**

Semester course; 4 lecture hours. 4 credits. Offered: I. A study of the chemical and physico-chemical principles fundamental to the development and use of medication dosage forms. Topics discussed include pharmaceutical calculations, prescription orders, weights and measures, theory of solutions, official waters, solution stabilizing agents and preservatives, sterile products, and ophthalmic products. In addition, there are lectures on descriptive and inferential statistics.

#### **PCEU 506 Biopharmaceutics and Pharmacokinetics.**

Semester course; 3 lecture and 1 conference hour. 4 credits. Offered: II. This course describes drug and dosage form stability and linear pharmacokinetics, which includes discussion of compartmental modeling, physiological concepts of pharmacokinetics, and clearance concepts. The course includes material related to statistics. Also, this course describes the physico-chemical and biopharmaceutical principles, fundamental to the development of pharmaceutical principles, fundamental to the development of pharmaceutical dosage forms including disperse systems, semi-solids, solids and novel drug delivery systems. Formulation, manufacture, control and relevant patient-pharmacist interactions will be addressed.

**PCEU 517 Pharmacy Skills Laboratory I.**

Semester course; 3 laboratory hours. 1 credit. Offered: I. This competency-based course includes an introduction to informatics, statistics, medical terminology, medication distribution systems, dispensing prescriptions, patient counseling and compounding solution drug products. Graded as honors or pass/fail.

**PCEU 518 Pharmacy Skills Laboratory II.**

Semester course; 3 laboratory hours. 1 credit. This competency-based course includes the preparation of sterile products and a continuation of medication distribution systems. Graded as honors or pass/fail.

**PCEU 601 Advanced Pharmaceutical Product Development.**

3 lecture and 4-10 laboratory hours. 5-8 credits. An advanced study of the pharmaceutical, physicochemical, and engineering principles and technology underlying the development of various pharmaceutical dosage forms.

**PCEU 606 Applied Pharmacokinetics.**

Semester course; 2 lecture and 1 conference hour per week. 2.5 credits. Offered: II. This course extends the concepts of pharmacokinetics as applied to dosage regimen design, pharmacokinetic variability, drug interactions, and statistical strategies for individualization of drug therapy.

**PCEU 611 Advanced Physical Pharmacy.**

Semester course; 3 lecture and 0-4 laboratory hours. 3-5 credits. Detailed application of physicochemical principles to areas of pharmaceutical interest, including colloids, rheology, phase rule, complexation, kinetics, drug stability, and micromeritics.

**PCEU 612 Advanced Physical Pharmacy.**

Semester course; 3 lecture and 0-4 laboratory hours. 3-5 credits. A continuation of PCEU 611.

**PCEU 617 Pharmacy Skills Laboratory III.**

Semester course; 3 laboratory hours. 1 credit. Offered: I. This competency-based course includes activities that range from traditional compounding exercises to role-playing, to interpreting results of selected analytical tests used in pharmacy practice. The sequencing of the skills laboratory exercises is meant to enable the student to apply concepts being introduced in a variety of didactic courses as well as to develop skills needed for the pharmacy practicum course.

**PCEU 621 Advanced Biopharmaceutics and Drug Disposition.**

Semester course; 3 lecture hours. 3 credits. Study at the advanced level of the relationships between the physicochemical properties of a drug and dosage form and the absorption, distribution, elimination, and pharmacological effects of the drug. Current theory and methodology involved in solving problems at the research level are emphasized.

**PCEU 622 Clinical Pharmacokinetics.**

Semester course; 2 lecture and 2 laboratory hours. 3 credits. The application of current pharmacokinetic theory to clinical problems involved in optimizing and monitoring drug use in patients. Particular attention is given to adjustment of drug dosage in individual patients with impaired drug elimination due to renal and hepatic dysfunction.

**PCEU 624 Pharmacokinetics.**

Semester course; 3 lecture hours. 3 credits. An advanced treatment of the kinetics of drug absorption, distribution, and elimination utilizing mathematical models, analog, and digital computers for analysis of linear and nonlinear biologic systems.

**PCEU 625 Pharmaceutical Analysis.**

Semester course; 1 lecture and 1 laboratory hour. 2 credits. Theory and practice of selected analytical techniques for the

quantitative analysis of drugs in body fluids and other matrices. Emphasis is on method validation, and immunoassay methodologies. Laboratory sessions will provide "hands on" experience with modern methods of drug analysis.

**PCEU 690 Pharmaceuticals Research Seminar.**

Semester course; 1 lecture hour. 1 credit. Required of all graduate students in pharmaceuticals. Research Seminar.

**PCEU 691 Special Topics in Pharmaceuticals.**

Semester course; 1-5 lecture hours. 1-5 credits. Presentation of subject matter is by lectures, tutorial studies, and/or library assignments in selected areas of advanced study not available in other courses or as part of the research training.

**PCEU 697 Directed Research in Pharmaceuticals.**

Semester course; 1-15 credits. Research leading to the M.S., Pharm.D., or Ph.D. degree.

## Basic health sciences

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Basic health sciences courses are included in the pharmacy curriculum. See Part XVI, School of Medicine, for details on the following courses and faculty.

Anatomy (ANAT 505)

Biochemistry and Molecular Biophysics (BIOC 523, 524)

Microbiology and Immunology (MICR 501)

Pharmacology and Toxicology (PHTX 603, 604)

Physiology (PHIS 506)

# *School of Social Work*

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**The School of Social Work is ranked among the top 15 social work programs in the nation. The B.S.W. degree program prepares students for graduate education or beginning-level professional practice. Students learn strategies for the enhancement of social functioning and the promotion of social justice through an integrated program of class and fieldwork experience.**



## **Undergraduate Program**

Social Work B.S.W.

**1001 W. Franklin St.  
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### **Frank R. Baskind**

Dean and Professor of Social Work (1992)  
A.B. 1967 Fordham University  
M.S.W. 1971 University of Connecticut  
Ph.D. 1978 University of Connecticut

### **Ann M. Nichols-Casebolt**

Associate Dean and Professor of Social Work (1993)  
B.A. 1971 University of Wisconsin  
M.S.S.W. 1978 University of Wisconsin  
Ph.D. 1984 University of Wisconsin

### **Kia J. Bentley**

Associate Professor and Director,  
Ph.D. Program (1989)  
B.A. 1978 Auburn University  
M.S.S.W. 1979 University of Tennessee  
Ph.D. 1987 Florida State University

### **Marcia P. Harrigan**

Director of the Master of Social Work Program  
and Associate Professor of Social Work (1979)  
B.A. Muskingum College  
M.S.W. 1974 Virginia Commonwealth University  
Ph.D. 1989 Virginia Commonwealth University

### **Jane W. Reeves**

Director of Baccalaureate Social Work Program  
and Assistant Professor of Social Work (1978)  
B.A. Denison University  
M.S. 1958 Simmons College

## **Faculty**

- Beckett, Joyce O. (1985) Professor  
B.A. 1967 Temple University  
M.S.S. 1969 Bryn Mawr College  
Ph.D. 1977 Bryn Mawr College
- Biggerstaff, Marilyn A. (1977) Professor  
B.A. Baker University  
M.S.W. University of Kansas  
D.S.W. 1976 University of Southern California
- Bryant, Shirley A. (1995) Associate Professor  
B.A. 1965 Hanover College  
M.S.W. 1969 Fordham University  
D.S.W. 1985 Howard University
- Cox, A. Leavelle (1994) Assistant Professor  
B.S. 1961 Virginia State University  
M.S.W. 1973 Temple University  
Ph.D. 1994 Smith College
- Cramer, Elizabeth P. (1995) Assistant Professor  
B.A. 1983 State University of New York, Binghamton  
M.S.W. 1984 University of Michigan  
Ph.D. 1995 University of South Carolina
- Dattalo, Patrick V. (1985) Associate Professor  
B.S. 1973 Brooklyn College
- M.S.W. 1980 Virginia Commonwealth University  
D.P.A. 1993 Virginia Commonwealth University
- Dungee-Anderson, Elizabeth D. (1985) Associate Professor  
B.A. 1967 Virginia Union University  
M.S.W. 1976 Virginia Commonwealth University  
D.S.W. 1985 Howard University
- Fabelo, Humberto E. (1995) Assistant Professor  
B.S. 1981 Florida State University  
M.S.W. 1989 Florida International University  
Ph.D. 1995 Florida International University
- Farmer, Rosemary L. (1989) Assistant Professor  
B.A. 1966 State University of New York, Harpur College  
M.S.W. 1972 Hunter College  
Ph.D. 1993 Virginia Commonwealth University
- Fauri, David P. (1983) Professor  
A.B. University of Michigan  
M.P.A. University of Michigan  
M.S.W. University of Illinois  
Ph.D. 1972 Syracuse University
- Green, Robert G. (1975) Professor  
B.S. Virginia Commonwealth University  
M.S.W. Virginia Commonwealth University  
Ph.D. 1980 Virginia Polytechnic Institute and State University
- Hutchison, Elizabeth D. (1987) Associate Professor  
B.A. 1967 Maryville College  
M.S.W. 1969 Washington University  
Ph.D. 1988 State University of New York, Albany
- Koerin, Beverly B. (1979) Associate Professor  
B.S. 1969 Virginia Commonwealth University  
M.S.W. 1974 Virginia Commonwealth University  
Ph.D. 1982 University of Virginia
- Kovacs, Pamela J. (1996) Assistant Professor  
B.S.W. 1973 University of Vermont  
M.S.W. 1979 Boston College  
Ph.D. 1996 Florida International University
- Miller, Jaclyn (1978) Associate Professor and  
Director, Field Instruction  
B.A. University of California  
M.S.S.W. University of Texas, Austin  
Ph.D. 1982 University of Texas, Austin
- Naleppa, Matthias J. (1996) Assistant Professor  
B.S.W. 1988 Catholic University of America  
M.S.W. 1991 Catholic University of America  
Ph.D. 1995 University of New York, Albany
- Netting, F. Ellen (1993) Professor  
B.A. 1971 Duke University  
M.S.S.W. 1975 University of Tennessee, Knoxville  
Ph.D. 1982 University of Chicago
- Newton-Guest, Shirley R. (1995) Assistant Professor  
B.A. 1974 Granbling State University  
M.S.W. 1977 Howard University  
D.S.W. 1994 Howard University
- Peay, Robert W. (1978) Assistant Professor  
B.S. Virginia Union University  
M.S.W. 1974 Virginia Commonwealth University
- Rodwell, Mary K. (1987) Associate Professor  
B.A. 1967 Immaculate College  
M.S.W. 1978 University of Kansas  
Ph.D. 1988 University of Kansas
- Rosenblum, Amy C. (1977) Assistant Professor and  
Assistant Director, Field Instruction  
B.A. Barnard College, Columbia University  
M.S.W. 1960 Columbia University, New York School of  
Social Work
- Rosenblum, Phillip L. (1992) Assistant Professor  
B.A. University of Pittsburgh  
M.S.W. University of Pittsburgh
- Schneider, Robert L. (1974) Professor  
B.A. 1965 Catholic University of America  
M.S.W. 1972 Tulane University  
D.S.W. 1975 Tulane University
- Schwartz, Sanford (1987) Associate Professor  
B.A. 1970 Washington University  
M.S.W. 1972 Washington University  
Ph.D. 1982 Washington University
- Seaberg, James R. (1978) Professor  
B.A. University of Nebraska  
M.S.W. University of Nebraska  
Ph.D. 1974 University of Wisconsin, Madison
- Sheridan, Michael J. (1984) Associate Professor  
B.S. 1971 Virginia Commonwealth University  
M.S.W. 1979 Virginia Commonwealth University  
Ph.D. 1988 Virginia Commonwealth University
- Stoesz, David P. (1995) Professor  
B.S. 1969 Springfield College  
M.S.W. 1976 Ohio State University  
D.S.W. 1980 University of Maryland, Baltimore
- Walsh, Joseph F. (1993) Assistant Professor  
B.A. Ohio State University  
M.S.W. Ohio State University  
Ph.D. 1992 Ohio State University

### **Emeriti faculty**

- Barber, Alice, Associate Professor Emerita  
B.A. Southeastern Louisiana College  
M.S.W. Tulane University
- Beverly, David P., Associate Professor Emeritus  
B.A. University of Richmond  
M.S.S.W. Virginia Commonwealth University  
D.S.W. Catholic University of America
- Dahlke, H. Otto, Professor Emeritus  
B.A. University of Illinois  
M.A. University of Illinois  
Ph.D. University of Wisconsin
- Falck, Hans S., Professor Emeritus  
B.A. Case Western Reserve University  
M.A. Syracuse University  
M.S.W. University of Buffalo  
Ph.D. Syracuse University
- Jones, Jean Boyd, Associate Professor Emerita  
A.B. Oberlin College  
M.S.S.A. Case Western Reserve University
- Roth, Edna T., Professor Emerita  
B.A. Case Western Reserve University  
MSSA Case Western Reserve University  
D.S.W. Smith College
- Russell, Dojelo C., Professor Emeritus  
B.A. University of Arkansas  
M.S.W. Tulane University  
D.S.W. Catholic University of America
- Schrieberg, Charlotte S., Associate Professor Emeritus  
B.S. Westhampton College  
M.S.S.W. Virginia Commonwealth University

Schwartz, Martin S. (1975) Professor Emeritus

B.A. University of Wisconsin

M.S. Boston University

Ed.D. 1968 Columbia University

Scotch, Charles Bernard, Professor Emeritus

B.A. Boston University

M.S.W. University of Pittsburgh

Ph.D. Brandeis University

Segal, Florence Z., Associate Professor Emeritus

B.A. Queens College

M.A. University of Chicago

Wells, Mabel G., Associate Professor Emerita

B.A. Howard University

M.S.W. Howard University

Ph.D. Bryn Mawr College

The oldest of its kind in the South, Virginia Commonwealth University's School of Social Work was established in 1917 as the Richmond School of Social Economy. Later renamed the School of Social Work and Public Health, it became the first unit of Richmond Professional Institute. The school was created initially in response to community manpower needs in working with World War I veterans and their social and health problems. Subsequent development of the school has expanded activity into all areas of human service.

With the creation of VCU in 1968, the School of Social Work became a unit of the university's Academic Campus. The Raleigh Building at 1001 W. Franklin St. houses faculty offices, a student lounge and conference rooms.

Social workers are committed to the enhancement of social functioning and the promotion of social justice. To achieve these goals, social workers provide services to individuals, families, groups, communities and organizations. They also plan and administer the delivery of social services and advocate positive social and institutional change. Social work education provides the knowledge, skills and value base for these professional activities.

Social work education at VCU is highly individualized and is characterized by a close relationship between faculty and student. Faculty members help students learn the form and method of social work practice and students are encouraged to discover their own unique style of helping others. The school's educational programs are designed to prepare students for practice in many different kinds of social agencies. A combination of classroom courses and concurrent fieldwork experiences facilitates integration of

knowledge, attitudes and skills necessary for professional practice. The integrated class and fieldwork curriculum offers students the opportunity to acquire a substantial base in social work practice, patterns of human behavior and development, organization, and operation of social welfare programs and policies, the methods of scientific inquiry in social work, and the needs of special populations.

## Accreditation

VCU's Bachelor of Social Work Program is accredited by the Commission on Accreditation of the Council on Social Work Education — the accrediting body for all schools of social work at both the baccalaureate and master's levels. Copies of the Accreditation Standards and Curriculum Policy Statement are available in the Office of the Dean.

## Baccalaureate Social Work Program

The School of Social Work offers a bachelor of social work degree to prepare graduates for beginning professional practice with individuals, families, groups, communities and organizations.

The objectives of the Bachelor of Social Work Program are:

1. to provide an integrated curriculum that allows students to acquire the knowledge, skills, ethics and values that are essential for beginning generalist social work practice,
2. to offer an educational experience that facilitates the critical analysis of current social work knowledge and practice,
3. to provide classroom and field instruction experiences designed to promote understanding of diversity and oppression, and
4. to provide a learning environment that supports lifelong learning and prepares students for the possibility of graduate education.

A copy of the expected student learning objectives can be found in the B.S.W. Student Handbook and the Field Manual.

## Degree Requirements

The bachelor of social work degree requires completion of 121 credits,

including 42 credits in the major. The curriculum of the Bachelor of Social Work Program is specifically designed to prepare students for beginning-level generalist social work practice. This practice model requires a broad base of knowledge about individuals, families, groups, communities and organizations and an appreciation of cultural diversity. General education courses provide an essential foundation for the upper-level professional curriculum and are required for admission to junior and senior social work courses.

## Freshman and sophomore year curricula

### General education requirements

	credits
<b>1. Communicating</b>	
A. Written communication	6
ENGL 101 and 200	
(with a minimum grade of "C" in each)	
B. Oral communication	3
SLWK 230 (with a minimum grade of "B")	
<b>2. Ethics</b>	
Most social work courses have specific units on professional ethics. Students also have the option of taking PHIL 212 or PHIL 213 to meet the critical thinking requirement.	
<b>3. Quantity and form</b>	
A. Mathematics	3
Demonstrated proficiency on the Math Placement Test or completion of one course in college-level mathematics	
B. Statistics	3
Completion of one course in statistics	
<b>4. Science and technology</b>	
BIOL 101 and Laboratory	4
Completion of one additional course chosen from BIOL 102, BIOL 103 or PSYC 401	3
<b>5. Critical thinking</b>	
A. PHIL 212, 213, 221 or 222	3
B. All students must either:	
a. pass the Computer Proficiency Examination prior to graduation or	
b. successfully complete CMSC 128 Computer Concepts and Applications (3 credits)	
<b>6. Interdependence</b>	
SOCY 101, ANTH 103 and 12 credits chosen from economics, history, and/or political science with a maximum of six credits in any one of these content areas	18
<b>7. Visual and performing arts</b>	
One course in the visual or performing arts selected from the approved list of art courses for non-majors	minimum of 2

**8. Humanities and social sciences**

Two courses in humanities chosen from the approved list and PSYC 101, PSYC 304, PSYC 407 10

**Admission requirements**

For admission to the professional preparation program offered in the junior and senior years, students must complete a minimum of 54 credits, including the following courses: ENGL 101-200, PSYC 101 and 304, SOCY 101, ANTH 103, MATH, PHIL 212, 213, 221 or 222, Statistics, BIOL 101 and Laboratory, and SLWK 201 and SLWK 230. Students must achieve a minimum grade of "C" in ENGL 101-200 and "B" in SLWK 201 and SLWK 230, and must have a minimum GPA of 2.5 in all course work completed before entry into upper-level classes.

Students eligible to register for upper-level social work courses need to make an appointment with their adviser to review and complete the application for admission.

Although the Bachelor of Social Work Program can be completed on a part-time basis, it cannot be completed exclusively in the evening because of field practicum requirements and the scheduling of some classes.

Transfer students may be granted provisional admission contingent on their meeting the above requirements and completion of 15 credits at VCU.

**Junior and senior year curricula**

All students must successfully complete the following courses. Students must earn a "C" or better in attempted 300-level social work courses before entering 400-level courses. Students must have a "C" or better in all required social work courses before graduation.

Transfer of credits from other colleges or universities or from other programs at VCU is determined on an individual basis. Credit is not given for life experiences.

A minimum of 121 credits is required for the B.S.W. degree.

	credits	
	1st Sem.	2nd Sem.
<b>Third year</b>		
SLWK 311 Social Work and Oppressed Groups	-	3
SLWK 313 Person in Society I	3	-
SLWK 330 Person in Society II	-	3

SLWK 332 Social Work Practice Fundamentals	-	3
SLWK 390 Foundations of Social Work Research	3	-
SLWK 393 Junior Field Instruction	-	3
Electives	6	3
PSYC 407 Psychology of the Abnormal	3	-
	15	15

**Fourth year**

SLWK 422 Social Welfare Legislation and Services	3	-
SLWK 431 Person in Society III	3	-
SLWK 441 Social Work Practice I	3	-
SLWK 494 Senior Field Instruction I	3	-
SLWK 442 Social Work Practice II	-	3
SLWK 495 Senior Field Instruction II	-	3
Electives	3	9
	15	15

Application for the field practicum must be made through the School of Social Work Field Department and must be received by the eighth week of the spring or fall semester. Field placements require students to spend 14 hours a week in an agency and cannot be completed on nights and weekends. Students may request a placement with some evening and/or weekend hours. These placements are scarce and the granting of such a request depends on the availability of appropriate agencies and resources.

**Minor in social welfare**

A minor in social welfare is available to non-social work majors. This minor consists of 18 credits, including SLWK 201 Introduction to Social Work and SLWK 422 Social Welfare Legislation and Services. The remaining 12 credits can be fulfilled by completing SLWK 230, 311, 313, 330, 390 or 431. Practice and field courses are restricted to majors.

**Honors in social work**

Baccalaureate social work majors may earn honors in social work. Eligible students may apply in the second semester of their junior year. Students must have completed at least 12 credits in social work at VCU and have earned a 3.3 overall GPA and a 3.6 GPA in social work courses.

To graduate with honors in social work, students must have earned three

credits of approved honors modules with a grade of "B" or better. Students who meet these requirements and all other graduation requirements of the university will have honors in social work noted on their transcripts.

**Student association**

The Baccalaureate Social Work Student Association (BSWSA), an organization of students in the Bachelor of Social Work Program, was established to facilitate communication among students and between the student body and the school faculty and staff. This organization plays a vital role in the educational process. Through student representation on committees within the school, BSWSA members participate in decision-making processes. In addition, the association enables students to conduct a variety of social and professional activities throughout the year.

**Graduate Social Work Programs**

The school offers a Doctor of Philosophy in Social Work and a two-year full-time or four-year structured part-time professional program in social work leading to the master of social work (M.S.W.) degree. For a detailed description of the Master of Social Work and Doctor of Philosophy programs see the Graduate Bulletin. A copy can be obtained by writing School of Graduate Studies, Virginia Commonwealth University, P.O. Box 843051, 901 W. Franklin St., Richmond, VA 23284-3051.

**Advanced-standing Program**

Open to a selected group of students, this program leads to a master of social work degree upon completion of at least 39 credits which must be completed in a summer session followed by an academic year.

For admission to this program, each applicant must hold a bachelor's degree from an undergraduate social work program accredited by the Commission on Accreditation of the Council on Social Work Education. The bachelor of social work degree must have been conferred no more than five years prior to application for the Advanced-standing Program. The Advanced-standing Program begins in



early June, continues through the summer, and culminates in graduation the following May. Successful candidates for this program must earn a minimum GPA of 3.2 for the last 60 hours of academic work and go through a structured interview on campus. Deadline for application is Dec. 1.

### Courses in social work (SLWK)

#### SLWK 201 Introduction to Social Work.

Semester course; 3 lecture hours. 3 credits. Systematic overview of the social work profession. Begins the process of professional socialization, both through class content and required service experience. Knowledge of the nature of social work, the fields of social work practice, target populations, overview of social work methods.

#### SLWK 230 Communication in the Helping Process.

Semester course; 3 lecture hours. 3 credits. The study of the knowledge, skills and values of effective human communication and interpersonal relations. Includes observation, collection and description of data, verbal and nonverbal communication, and the relevance of the above to social work practice. Integrates issues of human diversity in all course content. Emphasizes the demonstration and practice of communication through structured exercises.

#### SLWK 311 Social Work and Oppressed Groups.

Semester course; 3 lecture hours. 3 credits. Examines forces leading to individual prejudice and institutional oppression. Focuses on impact of oppression. Provides students with an understanding of diversity and a general knowledge of social work strategies to alleviate oppression and to empower the oppressed.

#### SLWK 313 Person In Society I.

Semester course; 3 lecture hours. 3 credits. Prerequisite: ANTH 103, BIOL 101, PSYC 304 and SOCY 101. First of a three-semester sequence on human behavior and the social environment. Uses theoretical concepts and research findings from the behavioral sciences as background for understanding and assessing the functioning of individuals and families in their social environment. Facilitates integration of theory and research with assessment skills associated with basic social work practice. Emphasizes the social systems approach for analyzing the impact of various social problems on individual and family dynamics.

#### SLWK 330 Person in Society II.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313. Second of three courses on human behavior in the social environment. Uses theoretical concepts from the

behavioral sciences to understand the family and small groups as social institutions and social groups as context for human behavior over the life cycle. Designed to provide a theoretical foundation for practice with families and small groups.

#### SLWK 332 Social Work Practice: Fundamentals.

Semester course; 3 lecture hours. 3 credits. Prerequisites: SLWK 313. Corequisite: SLWK 393. Open only to social work majors with junior status. First of three semester practice sequence. Introduces students to basic concepts and skills of beginning-level professional generalist social work practice. Emphasizes application of concepts to the concurrent fieldwork experience.

#### SLWK 390 Foundations of Social Work Research.

Semester course; 3 lecture hours. 3 credits. Prerequisite: STAT 208. Designed to provide an understanding and appreciation of a scientific, analytic approach to building knowledge for practice and for evaluating multilevel service delivery. Provides an overview of the research process, including problem formulation, sampling, design, measurement, data collection, data analysis, and dissemination of findings. Presents ethical standards of scientific inquiry with special attention to research with vulnerable and oppressed populations.

#### SLWK 393 Junior Field Instruction.

Semester course; 3 credits. Prerequisite: SLWK 313. Corequisite: SLWK 332. Open only to majors with junior status. Fourteen hours per week (spring semester) or 20 hours per week (summer session) in a community agency under the supervision of an agency-based field instructor. Intended to facilitate student's understanding of agency structure and community context, ability to engage in professional relationships, to assess strengths, define problems, set goals and utilize beginning-level practice skills with individuals, families, groups, organizations and communities. Promotes identification as a professional social worker.

#### SLWK 422 Social Welfare Legislation and Services.

Semester course; 3 lecture hours. 3 credits. Analyzes social welfare policy as related to social values, social problems, and social structures. Examines frameworks for policy analysis and for evaluation of programmatic outcomes of policy, with application to contemporary social service and income maintenance policies and delivery systems. Considers the economic, political, and ideological factors and processes that affect social welfare legislation, financing and implementation.

#### SLWK 431 Person in Society III.

Semester course; 3 lecture hours. 3 credits. Prerequisite: SLWK 313. Third of three courses on human behavior in the social environment. Builds on the theoretical concepts from

the behavioral sciences discussed in SLWK 230 and 313. Focus on understanding organizations and how their purposes, auspices, structure, processes, and environment affect the delivery of social services to diverse groups. The community context of social services, including that of the consumer, is emphasized from an open systems theoretical perspective. Students will be expected to integrate course content with their field experience or other agency with which they are familiar. Required of all undergraduate social work majors.

#### SLWK 441 Social Work Practice I.

Semester course; 3 lecture hours. 3 credits. Pre or Corequisite: SLWK 390. Prerequisites: SLWK 332, 393. Second of a three-semester practice sequence. Review of interviewing and problem solving for generalist social work practice with diverse populations. Emphasis on agency structure and function, skills of engagement and problem definition, assessment, planning for intervention and evaluation. Use of material from concurrent fieldwork practice to facilitate integration of learning.

#### SLWK 442 Social Work Practice II.

3 lecture hours. 3 credits. Prerequisites: SLWK 441, 494. Third of a three-semester practice sequence. Emphasizes planning and implementing change with diverse populations, professional ethics, professional development, termination and evaluation of generalist social work practice. Use of case material from concurrent fieldwork practice to facilitate integration of learning.

#### SLWK 492 Independent Study.

Semester course; 1, 2, 3 lecture hours. 1, 2, 3 credits. Prerequisites: Junior or senior standing and permission of instructor. Under supervision of a faculty adviser, whose consent is required to register, study of a topic of concern to the student. Each student must present his/her findings in writing or pass an oral examination.

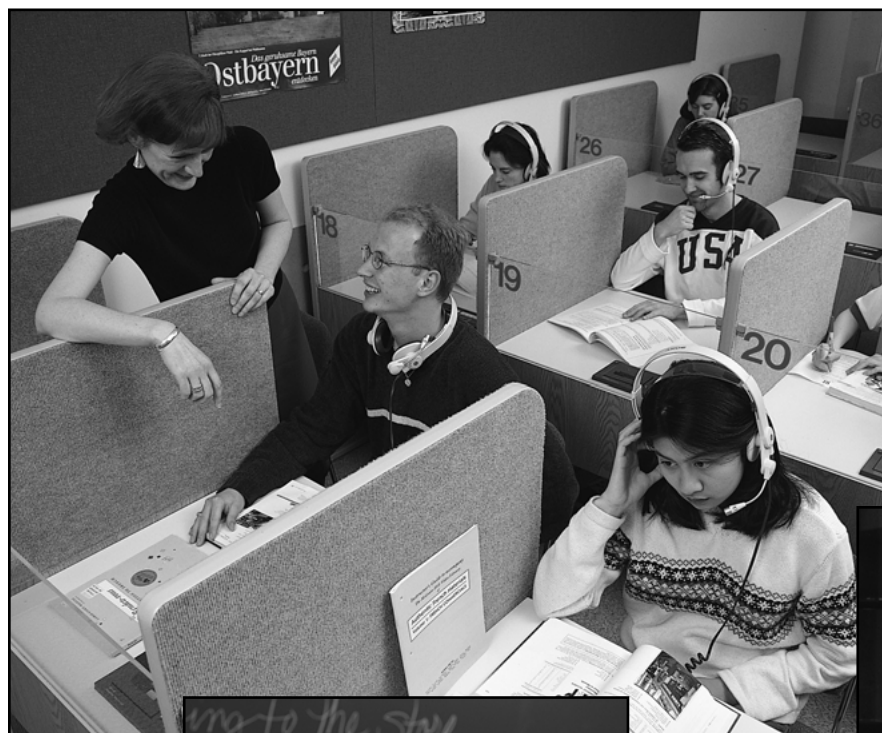
#### SLWK 494-495 Senior Field Instruction I and II.

Continuous course; 3-3 credits. Corequisites: SLWK 441, 442. Open only to majors with senior status. Fourteen hours per week in a community agency under the supervision of an agency based field instructor. Intended to develop knowledge, values and social work practice skills appropriate to entry-level generalist practice in human service agencies.



# Division of University Outreach

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**Welcoming students to VCU and extending the university into the local and international communities, the division fulfills its mission of educating citizens with lifelong commitments to learning and service.**



827 W. Franklin St.  
P.O. Box 842041  
Richmond, VA 23284-2041  
(804) 828-8418 • Fax (804) 828-8172  
[www.vcu.edu/outreach](http://www.vcu.edu/outreach)

**Sue Ann Messmer**

Vice Provost and  
Associate Professor, Department of Art History (1973)  
B.A. 1970 Duke University  
M.A. 1972 Indiana University

The Division of University Outreach is responsible for coordinating the university's community outreach, international activities, and enrollment services.

## Enrollment Services

Enrollment Services, which provides information and administrative support to prospective and enrolled students at VCU, consists of Undergraduate Admissions, Records and Registration, Financial Aid, Student Accounting and Student Services Centers.

Major functions of Enrollment Services include undergraduate student recruitment, undergraduate application processing, residency determination, registration, scheduling, academic records, veterans' services, financial aid, the billing of students for tuition and fees, room and board and various other charges, and enrollment management reporting. For more information, see the Enrollment Services Web site.  
— — — [www.vcu.edu/enroll](http://www.vcu.edu/enroll)

## Undergraduate Admissions

**Delores Taylor**

Director

The Office of Undergraduate Admissions, with locations at 1111 W. Broad St. and 821 W. Franklin St., Richmond, VA 23284-2526, plans and carries out activities to attract, admit, and enroll qualified undergraduate students to the university. The admissions staff hold information sessions on the Academic Campus for prospective students as well as maintain a Web site, publish newsletters, and host events for prospective students.

Admissions plays a major role in the development of undergraduate recruitment literature and is responsible for the distribution of such literature to

prospective students, their parents, and professionals in a variety of educational settings.

For information concerning university admission procedures, refer to Part II of this bulletin, call toll free 1-800-841-3638 or locally (804) 828-1222 or visit the Web site.

— — — [www.vcu.edu/ugrad](http://www.vcu.edu/ugrad)

## Records and Registration

**Anjour Harris**

University Registrar

The Office of Records and Registration coordinates the preparation of each semester's schedule of classes, assigns classroom space on the Academic Campus, develops final examination schedules for the Academic Campus, conducts registrations on both campuses, prepares class rolls and grade sheets and provides verification support for graduation.

This office also maintains all academic records and student information data, prepares deans' lists and notices of academic ineligibility for students on the academic campus, and processes changes of grades.

## Financial Aid

**Janel Schaefer**

Director

The Financial Aid Office provides a variety of services to help students afford higher education. In addition to offering grants, work-study employment and loans, the office also offers budgeting workshops, debt management counseling, and alternative financing options. The Financial Aid Office administers and distributes funds from federal, state, institutional and private fund sources. One-on-one appointments are available to students, their parents, faculty and staff. Most financial aid funds are applied directly to the student's tuition and fee bill. Refunds are generated when financial aid exceeds university charges.

The Financial Aid Office offers four counseling and information centers: on the Academic Campus at 901 W. Franklin St., and on the Medical College of Virginia Campus, School of Dentistry in the Lyons Building, School of Medicine in Sanger Hall, and schools of Allied Health Professions, Nursing

and Pharmacy also located in Sanger Hall.

For more detailed information refer to Part III of this bulletin or visit the Financial Aid Office Web site.

— — — [www.vcu.edu/enroll/finaid](http://www.vcu.edu/enroll/finaid)

The Financial Aid Office can also be contacted by e-mail at [faidmail@vcu.edu](mailto:faidmail@vcu.edu).

## Student Accounting

**Roberta Fife**

Director

The Student Accounting Department, located at 827 W. Franklin St., prepares and distributes bills for tuition and fees and other university charges such as room and board, study abroad fees, and telecommunications charges. The department also bills third-party payers for VCU charges.

Students who drop/withdraw from classes may be entitled to a refund. Student Accounting is responsible for administering the drop/withdrawal refund policies and initiating the refunds. Students who wish to ask for an exception to the refund policy file an appeal with Student Accounting.

For more information regarding policies and procedures, refer to Part III of this bulletin or visit the Web site.

— — — [www.vcu.edu/enroll/sa](http://www.vcu.edu/enroll/sa)

## Student Services Centers

**Elise Via**

Supervisor, Academic Campus Student Services Center

**Carol Gwaltney**

Supervisor, MCV Campus Student Services Center

The Student Services Centers, located on both campuses, are designed to answer enrollment services questions students may have. The services offered at these centers include:

- registering for classes,
- withdrawing or dropping from classes,
- providing copies of student schedules,
- processing official and unofficial transcript requests,
- processing enrollment verifications and certifications for loans, insurance, etc,
- updating student address information, and
- providing explanations for any hold that is on a student's registration.

**Locations****Academic Campus**

Founders Hall, 827 W. Franklin St., Room 104  
 Telephone: (804) 828-1349  
 Fax: (804) 828-8121

**MCV Campus**

Sanger Hall, 1101 E. Marshall St., Room 1-055  
 Telephone: (804) 828-9800  
 Fax: (804) 828-2703

For more information concerning the services offered and the hours of operation, visit the Student Services centers' Web site.

— — — [www.vcu.edu/enroll/ssc](http://www.vcu.edu/enroll/ssc)

## Office of Community Programs

**Catherine W. Howard**

Director, Office of Community Programs and  
 Associate Professor of Psychology (1988)  
 B.A. 1979 Davidson College  
 M.S. 1983 University of Maryland  
 Ph.D. 1988 Pennsylvania State University

The Office of Community Programs provides outreach activities for the community. This office administers VCU's off-campus credit-based instruction, the off-campus Master of Interdisciplinary Studies (MIS) Program, summer studies, noncredit continuing education, conference and workshop planning, and the Cooperative Education Program. The Office of Community Programs also coordinates many community outreach initiatives, including America Reads, the Community Service Associates Program, Service Learning, Commonwealth Society and numerous programs designed for youth.

**Summer Studies****Sue F. Munro**

B.A. 1965 Wheaton College  
 M.A. 1966 University of Tennessee

The variety and flexibility of VCU's educational program is especially evident during the summer. In 1999, over 8,600 summer students studied at VCU. These students came to work on a degree, to learn new skills, to explore new fields of study, to keep their professional skills up-to-date, and to seek intellectual enrichment.

Summer classes are planned around various sessions of three, four and one-half, five, six and eight weeks and even some two-week workshops. During the

summer, classes begin and end almost every week. Students who plan to devote their summer to study can schedule an approved combination of classes from various sessions and earn up to 15 credits in the 13 weeks that make up the summer session.

Announcements of VCU offerings are available on request from the Office of Community Programs, Virginia Commonwealth University, 827 W. Franklin St., P.O. Box 842041, Richmond, VA 23284-2041, (804) 828-1831 or on the Web.

— — — [www.vcu.edu/schedule](http://www.vcu.edu/schedule)

**Off-Campus Programs****Edward Howard**

B.S. 1995 Virginia Commonwealth University

The university provides numerous opportunities for part-time and full-time off-campus study both in the near-by community and throughout the state. Off-campus credit classes feature the same course work available on campus, and off-campus courses are fully degree-applicable within the normal standards of the schools within the university.

Many of VCU's off-campus courses are offered in response to an expression of need from various groups in the state. VCU offers, for example, courses in education for public school teachers at local high schools, and serves employees of local business organizations with on-site credit instruction. Other classes are offered on a continuing basis and serve specific educational needs in different geographical areas across the state.

In addition, selected VCU courses and workshops/seminars can be delivered via technology to an off-campus audience.

Questions regarding off-campus studies should be directed to Edward Howard at (804) 828-8819 or by e-mail at [eahoward@vcu.edu](mailto:eahoward@vcu.edu).

**Cooperative Education****Cheryl M. Melton**

B.S. 1971 and M.Ed. 1987 Virginia Commonwealth University

**Susan Story**

B.S. 1968 State University of New York at Stony Brook  
 M.Ed. 1988 Virginia Commonwealth University

Cooperative education blends traditional academics with paid work assignments in industry, business, government, and nonprofit organizations. This combination enhances the student's academic knowledge, personal development, and preparation for a professional career and provides broad exposure to one's academic major. Students may work part time while attending classes or alternate semesters of work and study.

The Co-op Program is open to undergraduate and graduate students in most academic disciplines. To be eligible students must:

- have declared a major,
- have completed a minimum of 24 undergraduate credits,
- have a 2.5 or better cumulative GPA for sophomores, or
- have a 2.0 or better cumulative GPA for juniors and seniors.

Prior to placement, a student must have eligibility verified and must successfully complete a co-op orientation session.

Once placed, a student must enroll in the appropriate noncredit co-op course. Special administrative fees for students registered for noncredit co-op experiences are shown in the Schedule of Classes for each semester.

Some credit arrangements are available through academic departments. For additional information contact Cooperative Education Program, Virginia Commonwealth University, 827 W. Franklin St., P.O. Box 842508, Richmond, VA 23284-2508 or call (804) 828-1579.

**Courses in cooperative education****COOP 298 Cooperative Education Experience.**

Semester course; the student works a maximum of 20 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry, or institution.

**COOP 398 Cooperative Education Experience.**

Semester course; the student works a maximum of 40 hours per week, completes all off-campus/on-campus assignments. No credit. Open to students who have been placed in an approved co-op position with an agency, business, industry, or institution.

## Continuing Education

### Patricia Worley

B.A. 1974 Virginia Commonwealth University

Noncredit professional education programs allow practitioners of numerous disciplines to participate in continuing education. In several of these programs, Continuing Education Units (CEUs) are awarded. The Office of Community Programs coordinates many of the university's continuing education activities and awards all of the CEUs for the university.

## Community outreach programs

The university demonstrates its commitment to serve as an active community partner by administering various outreach initiatives that address pressing social concerns. The office serves as an initial contact for community groups and then attempts to link students, faculty and staff to specific requests through existing programs such as the Community Service Associates and Service Learning courses.

A particular focus of community outreach programs has been the needs of urban youth. Many VCU students have become involved in programs such as: the Mentor Development Program, a program for training mentors who work with at-risk youth; Project TUTOR, a program that matches college student tutors with court-involved youth; and Summer Discovery, an enrichment program for area middle school students. In addition, the office administers the university's Americorps and America Reads programs.

The Carver-VCU partnership brings together faculty and community representatives to address the challenges of urban neighborhoods.

## Center for International Programs

### Arlene Jackson

Director, Center for International Programs (1993)  
B.A. 1972 and M.A. 1975 Fairleigh Dickinson University

The Center for International Programs (CIP) promotes a variety of faculty and student activities in a global context. CIP's mission is to advance the internationalization of the university in cooperation with the schools and the college, as well as other administrative

offices. CIP currently offers programs and services in faculty exchanges, university overseas linkages and agreements of cooperation, study abroad and student exchanges, international student and scholar advising, international student recruitment and admissions, and the English Language Program — English as a Second Language.

The director advises faculty, departments, schools, and the college in their efforts to expand their international activities and linkages. The director serves as the initial contact for off-campus groups and agencies requesting information on international activities at the university as well as drafts, in consultation with the appropriate VCU constituencies, agreements with overseas institutions.

For further information write the Center for International Programs, 916 W. Franklin St., P.O. Box 843403, Richmond, VA 23284-3403, call (804) 828-8471 or fax (804) 828-2552.

## Study Abroad and International Exchange

### Tina S. Murray

B.A. 1985 American University  
M.A. 1992 School for International Training

VCU students may extend their educational horizons by studying abroad in Europe, Asia, Africa or Latin America. During each academic year, over 200 VCU students study abroad. Although courses taken abroad need not be taken for credit, their purpose is educational, not recreational.

CIP regularly administers summer study programs in Britain, France, Italy, and Spain, and has offered courses in Brazil, Romania and Barbados recently.

VCU students also may participate in the International Student Exchange Program (ISEP), enabling them to study at member institutions worldwide. This program offers direct enrollment and academic credit toward a student's degree program at home, as well as immersion in another country's language and culture, at a cost no higher than what the student would pay at VCU for tuition, room and board. Credits earned by a VCU student through ISEP will appear on the transcript, but will not be included in the calculation of the student's cumulative GPA.

The CIP also administers the National Student Exchange (NSE) Program, by which VCU students may study at more than 100 state institutions throughout the United States, including Guam and Puerto Rico. Semester- or year-long exchanges are possible. In previous years, students have applied to several universities, including the University of Alaska/Fairbanks, Western Washington University and the University of New Mexico. Unlike the ISEP exchange, both credits and grades earned on exchange through NSE will appear on the VCU transcript.

Please consult with the CIP Study Abroad Office for admission requirements for individual programs or e-mail [cipaway@vcu.edu](mailto:cipaway@vcu.edu)

## International Student and Scholar Services

### Michele B. Barosh

B.A. 1992 Indiana University of Pennsylvania  
M.A. 1995 University of Kentucky

This office provides assistance and information to all students (F-1 and J-1), scholars/faculty/researchers (J-1), temporary employees (H-1 B, TN) and dependents.

Both the MCV and Academic campuses offer international student advising to assist international students with personal, financial, cultural, and social adjustment issues, and to help guide them within the university community so they may successfully pursue their academic goals. The international student adviser (ISA) assists international students and scholars in maintaining their nonimmigrant student visas by issuing and processing the necessary immigration documentation in accordance with relevant immigration rules and regulations.

The International Student and Scholar Services office on the Academic Campus is housed in the CIP. On the MCV Campus the office is located in Room 202-A in Hunton Hall.

## International Student Union and Student Activities

The International Student Adviser works with the International Student Union (ISU) — the official club of international students attending the university. Membership is open to all international students, faculty, and

staff interested in meeting and developing friendships with people of different cultural and national backgrounds.

In addition, the ISU promotes international understanding and awareness through its activities on and off campus. VCU is supportive of the ISU and its educational, cultural, and social activities. International students are encouraged to join and to participate in the various ISU functions. This participation is a valuable component of the students' entire educational experience.

VCU offers a number of extra-curricular activities to all students, complementing their formal education. These activities provide opportunities for the exchange of ideas, personal development and growth, and leadership training. And they aid international students in their adjustment to American campus life and provide the opportunity to practice spoken English through close contact with American friends.

## English Language Program

**Nancy A. Beasley**

B.A. 1979 University of Massachusetts

M.A. 1981 Gordon-Conwell Theological Seminary

M.A. 1988 University of Massachusetts

The English Language Program (ELP) offers an intensive English as a second language program for international students, permanent residents, and refugees who wish to improve their English language skills for undergraduate or graduate study at American universities, or for career and personal purposes.

A full range of courses is offered at the pre-intermediate through advanced levels. These courses include writing and grammar, speaking, listening, reading and vocabulary, pronunciation, accent reduction, TOEFL preparation, computer applications and various electives.

Based on the applicant's Test of English as a Foreign Language (TOEFL) score, admission to ELP may be recommended by the Office of Admissions at the time of VCU application review. Students who wish to take only English as a second language courses may apply directly to ELP.

Placement in ELP is based on the results of the English Language Placement Examination. This two and one-half hour test consists of the following: writing and grammar, reading

comprehension and vocabulary, and listening, speaking, and pronunciation. Students receive their test results by meeting individually with an ELP adviser who will make recommendations, answer questions, and register the student in the appropriate ELP courses.

For more information contact the ELP Office in Room 205 at 916 W. Franklin St., call (804) 828-2551, fax (804) 828-2552 or e-mail CIP-ELP@vcu.edu.

## International Admissions

VCU encourages qualified international students, both immigrant and nonimmigrant, to seek admission to the university. For complete information and application materials write the Office of International Admissions, Virginia Commonwealth University, 916 W. Franklin St., P.O. Box 843043, Richmond, VA 23284-3043, USA, call (804) 828-6016 or e-mail cipia@vcu.edu.

**English Language Proficiency Requirements.** To ensure maximum benefits from academic study at VCU, all nonnative English-speaking applicants, regardless of immigration status, must provide evidence of English language proficiency before admission and/or before enrollment in the university.

English language proficiency is evaluated on factors such as length of stay in the United States, amount and type of formal American education, TOEFL scores, and Scholastic Aptitude Test (SAT) scores.

In general, VCU requires a minimum score of 550 on TOEFL for admission, though some programs may require a higher TOEFL score. The university reserves the right to require additional testing and study in the VCU English Language Program prior to full-time enrollment in university courses.

Nonimmigrants (students with temporary U.S. visas). Because of time constraints involved in processing international applications and obtaining visas, prospective international applicants should submit the application for admission at least nine months before they plan to enroll. In order for immigration documents to be issued, all required admission credentials must be submitted no later than eight weeks before registration for classes. Applicants who are unable to meet the credentials deadline should plan to defer the intended semester of entry.

As required by U.S. regulations and by VCU admission policies, nonimmigrant applicants must demonstrate satisfactory academic achievement, adequate English proficiency through evaluation, and the ability to finance all educational and living expenses.

Refer to the freshman admission guidelines, transfer admission guidelines, and admission procedures for specific program requirements in Part II of this bulletin.

Applicants must submit academic records that demonstrate successful completion of secondary school education — usually 12 years of pre-university study in their own country.

VCU is unable to provide financial support for international undergraduate students. Therefore, applicants who need a student or F-1 visa or a visiting scholar or J-1 visa must also present documented evidence of available financial support to cover living and educational expenses while studying at VCU.

**U.S. Immigration and Naturalization Service regulations** usually do not allow nonimmigrant students to study at VCU as special, nondegree-seeking students. The university registers international students only if they present a current and valid visa that permits enrollment in a university. Proof of current visa-type must be submitted to the Office of Admissions before enrollment, unless the applicant is requesting an F-1 or J-1 visa. Students possessing these visas admitted to VCU must submit copies of all immigration documents to the international student adviser before enrolling in classes.

Immigrants (permanent residents, resident aliens, and asylum applicants). Since immigrant applicants usually are in the United States at the time an application is submitted, these students must meet the same application deadlines as American citizens.

If educated in the United States, immigrant applicants are considered under the same academic policies applicable to U.S. citizens. If educated outside this country, the same academic records are required as those for non-immigrant applicants.

VCU requires detailed information about U.S. immigration status. Proof of permanent residency must be submitted with the admission application.

Refer to the freshman admission guidelines, transfer admission guidelines, and admission procedures for specific program requirements.





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**VCU is located on two campuses – over 100 acres of academic opportunity. The campuses combine their efforts to ensure the best quality in academic, professional or liberal arts education. The Academic Campus is located in the residential Fan District, offering students a wonderful opportunity to experience Richmond’s fine heritage, while the MCV Campus is situated near the downtown Richmond financial, governmental and retail districts.**



# Board of Visitors and University Administration

## Board of Visitors

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Richmond

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Midlothian

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#### Timothy L. Gresham

Powhatan

#### Angela Miles King

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#### Lindley T. Smith

Richmond

#### Ted L. Smith

Richmond

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Richmond

#### Percy Wootton

Richmond

## University administration

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President

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Vice Provost for Academic Administration

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### Carl R. Fischer, B.S., M.S., M.P.H.

Associate Vice President for Health Sciences and  
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### Donald C. J. Gehring, B.A., J.D.

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### Hermes A. Kontos, M.D., Ph.D.

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### Francis L. Macrina, B.S., Ph.D.

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### Roderick J. McDavis, B.S., M.S., Ph.D.

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### Sue Ann Messmer, B.A., M.A.

Vice Provost for University Outreach

### Henry G. Rhone, B.A., M.Ed., Ed.D.

Vice Provost for Student Affairs

### Phyllis C. Self, B.S., M.S., Ph.D.

Vice Provost for Academic Technology

### Paul W. Timmreck, A.B.Ed., M.P.A.

Vice President for Finance and Administration

### Peter L. Wyeth, B.A., M.Ed.

Vice President for Advancement

## Academic Deans

### College of Humanities and Sciences

#### Stephen D. Gottfredson

Dean (1997) B.A. 1971 University of Oregon  
M.A. 1977 Johns Hopkins University  
Ph.D. 1977 Johns Hopkins University

#### Albert T. Sneden

Associate Dean and Professor of Chemistry (1977)  
B.S. 1968 Carnegie Mellon University  
Ph.D. 1975 Brandeis University

#### John H. Borgard

Associate Dean (1971)  
A.B. 1960 Marquette University  
M.Ed. 1964 Marquette University  
Ph.D. 1974 Loyola University

#### Laura J. Moriarty

Assistant Dean and Associate Professor of  
Criminal Justice (1993)  
B.C.J. 1984 and M.S. 1985 Louisiana State University  
Ph.D. 1988 Sam Houston State University

#### Arthur J. Seidenberg

Assistant Dean for Undergraduate Academic Affairs,  
Coordinator of Pre-Health Sciences Advising and  
Associate Professor of Biology (1968)  
B.S. 1961 Brooklyn College  
Ph.D. 1969 University of Illinois

## School of Allied Health Professions

#### Cecil B. Drain

Professor and Dean (1993)  
B.S.N. 1976 University of Arizona  
M.S. 1980 University of Arizona  
Ph.D. 1986 Texas A & M University

#### Delores G. Clement

Associate Professor and Associate Dean (1988)  
B.A. 1970 Mount Saint Joseph  
M.A. 1979 Ohio State University  
M.S. 1981 Rush University  
Dr.P.H. 1988 University of California, Berkeley

#### Stephen C. Harvey

Assistant Professor and Assistant Dean (1977)  
M.Ed. 1975 Virginia Commonwealth University

**Debra A. Ropelewski**

Assistant Dean (1983)  
B.S. 1982 Virginia Polytechnic Institute and State University  
M.B.A. 1988 Virginia Commonwealth University

**School of the Arts****Richard E. Toscan**

Dean and Professor of Theatre (1996)  
B.A. 1963 Purdue University  
M.A. 1964 University of Illinois, Urbana-Champaign  
Ph.D. 1970 University of Illinois, Urbana-Champaign

**Thomas H. DeSmidt**

Associate Dean for Academic Administration and Professor of Painting and Printmaking (1971)  
A.A. Lincoln College  
B.F.A. Layton School of Art  
M.F.A. 1970 Syracuse University

**John T. Bryan**

Associate Dean for Sponsored Research and Development and Assistant Professor of Art (1981)  
B.S. Davidson College  
M.A. George Peabody College  
M.F.A. 1975 City College of New York

**Paul E. Petrie**

Associate Dean for Academic Affairs and Professor of Interior Design (1984)  
B.I.D. University of Manitoba  
M.F.A. 1976 Syracuse University

**Nancy M. Scott**

Acting Assistant Dean and Associate Dean, Shaqab College of Design Arts and Assistant Professor of Fashion Design and Merchandising (1992)  
B.F.A. Virginia Commonwealth University  
M.Ed. 1996 Virginia Commonwealth University

**Lydia C. Thompson**

Assistant Dean for Undergraduate Studies and Assistant Professor (1990)  
B.F.A. 1983 Ohio State University  
M.F.A. 1985 New York State College of Ceramics

**School of Business****Michael Sesnowitz**

Dean and Professor of Economics (2000)  
B.A. and M.A. Brooklyn College of The City University of New York  
Ph.D. 1971 University of Pittsburgh

**E. G. Miller**

Associate Dean and Associate Professor of Insurance and Management Science (1973)  
B.S. University of Alabama  
M.A. University of Alabama  
Ph.D. 1976 University of Alabama  
C.L.U.; C.P.C.U.

**Walter S. Griggs Jr.**

Associate Dean for Undergraduate Studies and Associate Professor of Business Law (1971)  
M.H. University of Richmond  
J.D. University of Richmond  
Ed.D. 1979 College of William and Mary

**Charles J. Gallagher**

Associate Dean for External Affairs and Associate Professor of Economics (1971)  
B.S. Rider College  
Ph.D. 1971 West Virginia University

**School of Dentistry****Ronald J. Hunt**

Harry Lyons Professor and Dean (1998)  
D.D.S. 1973 University of Iowa  
M.S. 1982 University of Iowa

**James H. Revere Jr.**

Assistant Professor of Orthodontics and Executive Associate Dean (1968)  
B.A. 1961 University of Richmond  
D.D.S. 1965 Medical College of Virginia

**Carolyn Booker**

Assistant Dean for Students  
B.S. 1976 South Carolina State University  
M.A. 1977 South Carolina State University  
Ph.D. 1987 Southern Illinois University

**Marshall P. Brownstein**

Associate Professor of Pediatric Dentistry and Assistant Dean for Admissions (1975)  
B.S. 1963 University of Maryland  
D.D.S. 1967 University of Maryland

**Betsy A. Hagan**

Associate Professor of General Practice and Assistant Dean for Clinical Affairs (1980)  
B.S. 1974 Virginia Polytechnic Institute and State University  
D.D.S. 1978 Medical College of Virginia of Virginia Commonwealth University  
M.B.A. 1984 Virginia Commonwealth University

**James E. Hardigan**

Associate Professor and Assistant Dean for Administration (1975)  
B.S. 1968 Northeastern University  
M.B.A. 1970 Northeastern University  
Ph.D. 1975 Cornell University

**Harvey A. Schenkein**

Paul Tucker Goad Professor of Periodontics and Microbiology and Immunology and Assistant Dean for Research (1978)  
B.A. 1970 State University of New York  
D.D.S. 1974 State University of New York  
Ph.D. 1978 State University of New York

**School of Education****John S. Oehler Jr.**

Dean and Professor of Education (1970)  
B.A. Davidson College  
M.A.T. University of North Carolina  
Ed.D. 1973 University of North Carolina

**Diane J. Simon**

Associate Dean and Associate Professor of Special Education (1988)  
B.S. Hampton University  
M.A. New York University  
Ph.D. 1981 New York University

**School of Engineering****Robert J. Mattauch**

Dean and Commonwealth Professor of Electrical Engineering (1996)  
B.S. 1962 Carnegie Institute of Technology  
M.E. 1963 North Carolina State University  
Ph.D. 1967 North Carolina State University

**Gerald E. Miller**

Associate Dean for Graduate Affairs and Professor and Chair, Biomedical Engineering Program (1996)  
B.S. 1971 Pennsylvania State University  
M.S. 1975 Pennsylvania State University  
Ph.D. 1978 Pennsylvania State University

**Barton B. Cregger**

Assistant Dean for Undergraduate Programs and Operations (1999) and Assistant Professor of Electrical Engineering (1998)  
B.S. 1980 University of Virginia  
M.S. 1982 University of Virginia

**Ronnie J. Price**

Assistant Dean for Student Services (1999) and Assistant Professor of Engineering (1998)  
B.S. 1989 University of Virginia at Wise (formerly Clinch Valley College)  
M.S. 1992 University of Virginia  
Ph.D. (ABD) University of Virginia

**Susan F. Younce**

Assistant Dean for Administration and Finance and Assistant Professor of Engineering (1981)  
B.A. 1974 University of Richmond  
M.S. 1991 Virginia Commonwealth University

**School of Graduate Studies****Jack L. Haar**

Dean and Professor of Anatomy, School of Medicine (1971)  
B.S. 1964 Capital University  
M.S. 1966 University of Arizona  
Ph.D. 1970 Ohio State University

**Sherry T. Sandkam**

Associate Dean and Assistant Professor, Division of Educational Studies, School of Education (1981)  
B.A. 1970 Longwood College  
M.B.A. 1986 Virginia Commonwealth University  
Ph.D. 1996 Virginia Commonwealth University

**School of Medicine****Heber H. Newsome**

Professor of Surgery and  
Dean, School of Medicine (1970)  
B.S. 1958 Wake Forest University  
M.S. 1962 and M.D. 1962 Tulane University

**Jan F. Chlebowsky**

Professor of Biochemistry and Molecular Biophysics  
and Associate Dean for Graduate Education (1979)  
B.A. 1965 St. Mary's College  
Ph.D. 1969 Case Western Reserve University

**Ralph R. Clark III**

Assistant Professor of Internal Medicine and  
Associate Dean for Clinical Activities (1990)  
B.S. 1983 College of William and Mary  
M.D. 1987 Medical College of Virginia of Virginia  
Commonwealth University

**William M. Gleason**

Assistant Professor and Associate Dean for  
Administration (1980)  
A.B. 1969 University of North Carolina, Chapel Hill  
M.B.A. 1973 Indiana University

**Carol L. Hampton**

Associate Professor and Associate Dean for Faculty  
and Instructional Development (1987)  
B.A. 1965 University of Arkansas  
M.M.S. 1969 Tulane University

**Cynthia M. Heldberg**

Associate Professor and Associate Dean for  
Admissions (1986)  
B.A. 1965 Brown University  
M.A. 1983 West Virginia College  
Ph.D. 1997 Virginia Commonwealth University

**Paul E. Mazmanian**

Professor of Preventive Medicine and Community  
Health and Associate Dean for Continuing Medical  
Education (1978)  
B.S. 1972 Wayne State University  
M.A. 1975 Michigan State University  
Ph.D. 1979 University of Michigan

**James M. Messmer**

Associate Professor of Radiology and Associate Dean  
for Medical Education (1981)  
B.A. 1968 Rockhurst College  
M.D. 1972 St. Louis University  
M.A. 1995 Virginia Commonwealth University

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Associate Professor of Internal Medicine and  
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Professor of Internal Medicine and Associate Dean for  
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**School of Nursing****Nancy F. Langston**

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B.S.N. 1966 University of Arkansas  
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Ph.D. 1977 Georgia State University

**Inez Tuck**

Associate Professor  
and Interim Associate Dean (1999)  
B.S.N. 1970 A&T State University, N.C.  
M.N. 1972 University of Florida, Gainesville  
Ph.D. 1980 University of North Carolina, Greensboro  
M.B.A. 1995 University of Tennessee, Knoxville

**Janet B. Younger**

Professor and Associate Dean for Undergraduate  
Programs (1984)  
B.S. 1967 Medical College of Virginia  
M.Ed. 1970 University of Virginia  
M.S. 1972 Virginia Commonwealth University  
Ph.D. 1984 University of Virginia

**Anthony J. DeLellis**

Assistant Dean for Administration (1985)  
B.A. 1970 University of Delaware  
M.A. 1973 Central Michigan University  
Ed.D. 1977 University of Virginia

**School of Pharmacy****Victor A. Yanchick**

Professor and Dean (1996)  
B.S. 1962 University of Iowa  
M.S. 1966 University of Iowa  
Ph.D. 1968 Purdue University

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Associate Professor and Associate Dean for  
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B.S. 1970 University of Cincinnati  
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**William E. Smith**

Associate Professor and Associate Dean for  
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Pharm.D. 1965 University of California  
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Ph.D. 1994 Auburn University

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Associate Professor and Associate Dean  
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B.S. 1976 University of Connecticut  
Pharm.D. 1978 Wayne State University

**School of Social Work****Frank R. Baskind**

Dean and Professor of Social Work (1992)  
A.B. 1967 Fordham University  
M.S.W. 1971 University of Connecticut  
Ph.D. 1978 University of Connecticut

**Ann M. Nichols-Casebolt**

Associate Dean, Director of the Ph.D. Program and  
Professor of Social Work (1993)  
B.A. 1971 University of Wisconsin  
M.S.S.W. 1978 University of Wisconsin  
Ph.D. 1984 University of Wisconsin

# *Rights of Students Under the Family Educational Rights and Privacy Act*

Pursuant to a federal statute enacted to protect the privacy rights of students (Family Educational Rights and Privacy Act of 1974 (FERPA), as amended, enacted as Section 438 of the General Education Provisions Act), eligible students of Virginia Commonwealth University are permitted to inspect and review education records of which the student is the subject. A list of education records maintained by the university is available from the Office of Records and Registration. A statement of university policy concerning inspection and disclosure of education records has been formulated in compliance with the federal statute. Copies of the policy are also available from the Office of Records and Registration.

Generally, the act provides that no personally identifiable information will be disclosed without the student's con-

sent, except for directory information and information to other school officials with a legitimate educational interest. When personally identifiable information, other than directory information, is disclosed, a record will be maintained of these disclosures. This record is also available for inspection and review by the student.

If an eligible student feels that his or her education record is inaccurate, misleading, or otherwise in violation of the student's privacy or other rights, the student may request an amendment to the record.

Should the university fail to comply with the requirements of the act, the student has the right to file a complaint with the Family Policy Compliance Office, U.S. Department of Education, 600 Independence Ave., SW, Washington, D.C. 20202.

## **Parental Notification Amendment**

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A change in FERPA-related procedures was implemented for the 1999-2000 academic year because of recent amendments to the FERPA signed into federal law in fall 1998 specifically allowing notification of the parents or guardians of students under the age of 21 who violate any law or university rule regarding use or possession of alcohol or other controlled substance. The Virginia Attorney General's Task Force on Drinking by College Students also recommended such notification in its 1998 report.

In accordance with these documents, a parental notification procedure has been included in the VCU Drug Free Schools and Workplace Policy.

# Determination of Student Classification for In-state Tuition Purposes

Section 23-7.4, of the Code of Virginia, governs eligibility for in-state tuition. Effective for students enrolling on or after July 1, 1996, the statute provides:

**§ 23-7.4. Eligibility for in-state tuition charges.** – A. For purposes of this section and §§ 23-7.4:1, 23-7.4:2 and 23-7.4:3, the following definitions shall apply:

“Date of the alleged entitlement” means the first official day of class within the term, semester or quarter of the student’s program.

“Dependent student” means one who is listed as a dependent on the federal or state income tax return of his parents or legal guardian or who receives substantial financial support from his spouse, parents or legal guardian. It shall be presumed that a student under the age of twenty-four on the date of the alleged entitlement receives substantial financial support from his parents or legal guardian, and therefore is dependent on his parents or legal guardian, unless the student (i) is a veteran or an active duty member of the U.S. Armed Forces; (ii) is a graduate or professional student; (iii) is married; (iv) is a ward of the court or was a ward of the court until age 18; (v) has no adoptive or legal guardian when both parents are deceased; (vi) has legal dependents other than a spouse; or (vii) is able to present clear and convincing evidence that he is financially self-sufficient.

“Domicile” means the present, fixed home of an individual to which he returns following temporary absences and at which he intends to stay indefinitely. No individual may have more than one domicile at a time. Domicile, once established, shall not be affected by mere transient or temporary physical presence in another jurisdiction.

“Domiciliary intent” means present intent to remain indefinitely.

“Emancipated minor” means a student under the age of eighteen on the date of the alleged entitlement whose parents or guardians have surrendered the right to his care, custody and earnings and who no longer claim him as a dependent for tax purposes.

“Full-time employment” means employment resulting in, at least, an annual earned income reported for tax purposes equivalent to fifty work weeks of forty hours at minimum wage.

“Independent student” means one whose parents have surrendered the right to his care, custody and earnings, do not claim him as a dependent on federal or state income tax returns, and have ceased to provide him substantial financial support.

“Special arrangement contract” means a contract between a Virginia employer or the authorities controlling a federal installation or agency located in Virginia and a public institution of higher education for reduced rate tuition charges as described § 23-7.4:2 G.

“Substantial financial support” means financial support in an amount which equals or exceeds that required to qualify the individual to be listed as a dependent on federal and state income tax returns.

“Unemancipated minor” means a student under the age of eighteen on the date of the alleged entitlement who is under the legal control of and is financially supported by either of his parents, legal guardian or other person having legal custody.

“Virginia employer” means any employing unit organized under the laws of Virginia or having income from Virginia sources regardless of its organizational structure, or any public or nonprofit organization authorized to operate in Virginia.

B. To become eligible for in-state tuition, an independent student shall establish by clear and convincing evidence that for a period of at least one

year immediately prior to the date of the alleged entitlement, he was domiciled in Virginia and had abandoned any previous domicile, if such existed.

To become eligible for in-state tuition, a dependent student or unemancipated minor shall establish by clear and convincing evidence that for a period of at least one year prior to the date of the alleged entitlement, the person through whom he claims eligibility was domiciled in Virginia and had abandoned any previous domicile, if such existed.

In determining domiciliary intent, all of the following applicable factors shall be considered: continuous residence for at least one year prior to the date of alleged entitlement, state to which income taxes are filed or paid, driver’s license, motor vehicle registration, voter registration, employment, property ownership, sources of financial support, military records, a written offer and acceptance of employment following graduation, and any other social or economic relationships with the Commonwealth and other jurisdictions.

Domiciliary status shall not ordinarily be conferred by the performance of acts which are auxiliary to fulfilling educational objectives or are required or routinely performed by temporary residents of the Commonwealth. Mere physical presence or residence primarily for educational purposes shall not confer domiciliary status. A matriculating student who has entered an institution and is classified as an out-of-state student shall be required to rebut by clear and convincing evidence the presumption that he is in the Commonwealth for the purpose of attending school and not as a bona fide domiciliary.

Those factors presented in support of entitlement to in-state tuition shall have existed for the one-year period prior to the date of the alleged entitlement. However, in determining the domiciliary intent of active duty military personnel

residing in the Commonwealth, or the domiciliary intent of their dependent spouse or children who claim domicile through them, who voluntarily elect to establish Virginia as their permanent residence for domiciliary purposes, the requirement of one year shall be waived if all other conditions for establishing domicile are satisfied.

C. A married person may establish domicile in the same manner as an unmarried person.

An emancipated minor may establish domicile in the same manner as any other independent student. A nonmilitary student whose parent or spouse is a member of the armed forces may establish domicile in the same manner as any other student.

Any alien holding an immigration visa or classified as a political refugee shall also establish eligibility for in-state tuition in the same manner as any other student. However, absent congressional intent to the contrary, any person holding a student or other temporary visa shall not have the capacity to intend to remain in Virginia indefinitely and, therefore, shall be ineligible for Virginia domicile and for in-state tuition charges.

The domicile of a dependent student shall be rebuttably presumed to be the domicile of the parent or legal guardian claiming him as an exemption on federal or state income tax returns currently and for the tax year prior to the date of the alleged entitlement or providing him substantial financial support.

For the purposes of this section, the domicile of an unemancipated minor or a dependent student eighteen years of age or older may be either the domicile of the parent with whom he resides, the parent who claims the student as a dependent for federal and Virginia income tax purposes for the tax year prior to the date of the alleged entitlement and is currently so claiming the student, or the parent who provides the student substantial financial support. If there is no surviving parent or the whereabouts of the parents are unknown, then the domicile of an unemancipated minor shall be the domicile of the legal guardian of such unemancipated minor unless there are circumstances indicating that such guardianship was created primarily for the purpose of conferring a Virginia domicile on the unemancipated minor.

D. It is incumbent on the student to apply for change in domiciliary status on becoming eligible for such change. Changes in domiciliary status shall only be granted prospectively from the date such application is received.

A student who knowingly provides erroneous information in an attempt to evade payment of out-of-state fees shall be charged out-of-state tuition fees for each term, semester or quarter attended and may be subject to dismissal from the institution. All disputes related to the veracity of information provided to establish Virginia domicile shall be appealable through the due process procedure required by § 23-7.4:3. (1984, c. 422; 1985, cc. 179, 572; 1988, c. 124; 1989, c. 371; 1990, c. 680; 1991, c. 590; 1996, cc. 931, 981.)

**The 1996 amendments.** – The 1996 amendments by cc. 931 and 981 are identical, and rewrote this section.

**§ 23-7.4:1. Waiver of tuition and required fees for certain students.**

– A. 1. All sums appropriated by law for the purpose of effecting the provisions of this subsection shall be used for the sole purpose of providing for free tuition and required fees at the state-supported institutions and institutional charges, general or college fees, or any charges by whatever term referred to, board and room rent, and books and supplies at any education or training institution of collegiate or secondary grade in the Commonwealth of Virginia approved in writing by the Director of the Department of Veterans' Affairs for the use and benefit of the children not under sixteen and not over twenty-five years of age either of whose parents was killed in action, is missing in action or a prisoner of war in any armed conflict subsequent to December 6, 1941, while serving in the Army, Navy, Marine Corps, Air Force or Coast Guard of the United States, or was or is or may hereafter become totally and permanently disabled due to service during such periods if such parent (i) was a citizen of Virginia at the time of entering such service; (ii) is and has been, for at least ten years immediately prior to the date on which application was submitted by or on behalf of such child for admission to any education or training institution of collegiate or secondary grade in this Commonwealth, a citizen of Virginia; (iii) if such parent is

deceased, was a citizen of Virginia on the date of his or her death and had been a citizen of Virginia for at least ten years immediately prior to his or her death; or (iv) if such parent is deceased and the surviving parent had been, at some time previous to marrying the deceased parent, a citizen of Virginia for at least ten years and is and has been a citizen of Virginia for at least ten years immediately prior to the date on which application was submitted by or on behalf of such child for admission to any education or training institution of collegiate or secondary grade in this Commonwealth.

2. Such children, upon recommendation of the Director of the Department of Veterans' Affairs, shall be admitted to state institutions of secondary or higher education, free of tuition and all required fees. Each state-supported institution shall include in its catalogue or equivalent publication a statement describing the benefits provided by this subsection.

3. The amounts that may be or may become due by reason of attendance at any such educational or training institution, not in excess of the amount specified in subdivision 5, shall be payable on vouchers approved by the Director of the Department of Veterans' Affairs.

4. The Director of the Department of Veterans' Affairs shall determine the eligibility of the children who may make application for the benefits provided for in this subsection and shall satisfy himself of the attendance and satisfactory progress of such children at such institution and of the accuracy of the charge or charges submitted on account of the attendance of any such children at any such institution. However, neither the Director nor any employee of the Department of Veterans' Affairs shall receive any compensation for such services.

5. To carry out the provisions of this subsection, there may be expended such funds as shall be appropriated for the purpose in the general appropriation acts. However, the maximum amount to be expended for each such child shall not be more, when combined with any federal allowance which may be made for such tuition, charges, fees, rent, books and supplies, than the actual amount of the benefits provided for in this subsection.

6. For the purposes of this subsection, user fees, such as room and board charges, shall not be included in this authorization to waive tuition and fees. However, all required fees, educational and auxiliary, shall be waived along with tuition.

B. Any child between the ages of sixteen and twenty-five whose parent or any person whose spouse has been killed in the line of duty while employed or serving as a law-enforcement officer, firefighter, member of a rescue squad, sworn law-enforcement officer, special agent of the Department of Alcoholic Beverage Control, state correctional, regional or local jail officer, regional jail or jail farm superintendent, sheriff, deputy sheriff, or member of the Virginia National Guard while such member is serving in the Virginia National Guard or as a member of the United States Armed Forces, shall be entitled to free undergraduate tuition and required fees at any public institution of higher education in Virginia under the following conditions:

1. The chief administrative officer of the Alcoholic Beverage Control Board, emergency medical services agency, law-enforcement agency, or other appropriate agency or the Superintendent of State Police certifies that the deceased parent or spouse was employed or serving as a law-enforcement officer or a firefighter or member of a rescue squad or in any other capacity as specified in this section and was killed in the line of duty while serving or living in the Commonwealth; and

2. The child or spouse shall have been offered admission to a public institution of higher education. Any child or spouse who believes he is eligible shall apply to the public institution of higher education to which he has been admitted for the benefits provided by this subsection. The institution shall determine the eligibility of the applicant for these benefits and shall also ascertain that the recipients are in attendance and are making satisfactory progress. The amounts payable for tuition and required fees for the applicants shall be waived by the institution accepting the students.

For the purposes of this subsection, user fees, such as room and board charges, shall not be included in this authorization to waive tuition and fees. However, all required fees, educational and auxiliary, shall be waived along with tuition.

C. Senior citizens shall be entitled to free tuition and required fees pursuant to the provisions of Chapter 4.5 (§ 23-38.54 et seq.) of Title 23.

D. Tuition and required fees may be waived for a student from a foreign country enrolled in a public institution of higher education through a student exchange program approved by such institution, provided the number of foreign students does not exceed the number of students paying full tuition and required fees to the institution under the provisions of the exchange program for a given three-year period. (1996, cc. 931, 981.)

§ 23-7.4:2. Eligibility for in-state or reduced tuition for students not domiciled in Virginia; members of the National Guard of the Commonwealth of Virginia. – A. A nonmilitary student whose parent or spouse is a member of the armed forces may establish domicile in the same manner as any other student. However, a nonmilitary student, not otherwise eligible for in-state tuition, whose parent or spouse is a member of the military residing in the Commonwealth pursuant to military orders and claiming a state other than Virginia on their State of Legal Residence Certificate, shall be entitled to in-state tuition charges when the following conditions are met: (i) if the student is a child of a member of the armed forces, then the nonmilitary parent shall have, for at least one year immediately prior to the date of alleged entitlement for in-state tuition charges, resided in Virginia, been employed full time and paid individual income taxes to Virginia. Such student shall be eligible for in-state tuition charges only if the nonmilitary parent claims him as a dependent for Virginia and federal income tax purposes, as evidenced by claiming him as a dependent on an individual or joint return; or (ii) if the student is the spouse of a member of the armed forces, then such student shall have, for at least one year immediately prior to the date of alleged entitlement for in-state tuition, resided in Virginia, been employed full time and paid individual income taxes to Virginia; or (iii) if the student is the child or the spouse of a member of the armed forces, then the student shall be entitled to in-state tuition charges for a maximum of one year during the period that the military parent or spouse is

residing in the Commonwealth. Any student whose spouse or parent is a member of the armed forces shall be eligible for in-state tuition charges for so long as the conditions of clauses (i) and (ii) of this subsection continue to be met. Military dependents provided in-state tuition for one year during the period the military parent or spouse is residing in Virginia shall be counted as out-of-state students for admissions, enrollment and tuition and fee revenue policy purposes.

B. Students who live outside this Commonwealth and have been employed full time inside Virginia for at least one year immediately prior to the date of the alleged entitlement for in-state tuition shall be eligible for in-state tuition charges if such student has paid Virginia income taxes on all taxable income earned in this Commonwealth for the tax year prior to the date of the alleged entitlement. Students claimed as dependents for federal and Virginia income tax purposes who live outside this Commonwealth shall become eligible for in-state tuition charges if the nonresident parents claiming them as dependents have been employed full time inside Virginia for at least one year immediately prior to the date of the alleged entitlement and paid Virginia income taxes on all taxable income earned in this Commonwealth for the tax year prior to the date of the alleged entitlement. Such students shall continue to be eligible for in-state tuition charges for so long as they or their qualifying parent is employed full time in Virginia, paying Virginia income taxes on all taxable income earned in this Commonwealth and the student is claimed as a dependent for Virginia and federal income tax purposes.

C. Any person who (i) is a member of the National Guard of the Commonwealth of Virginia and has a minimum remaining obligation of two years, (ii) has satisfactorily completed required initial active duty service, (iii) is satisfactorily performing duty in accordance with regulations of the National Guard, and (iv) is enrolled in any state institution of higher education, any private, accredited and non-profit institution of higher education in the Commonwealth whose primary purpose is to provide collegiate or graduate education and not to provide religious training or theological education, any



course or program offered by any such institution or any public vocational or technical school shall be eligible for a grant in the amount of one-half of the tuition not exceeding \$500 per term, semester or quarter. No person shall receive grants totaling more than \$1,000 in any one year. Application for a grant shall be made to the Department of Military Affairs. Grants shall be awarded from funds available for the purpose by such Department.

D. Notwithstanding the provisions of § 23-7.4 or any other provision of the law to the contrary, the governing board of any state institution of higher education or the governing board of the Virginia Community College System may charge the same tuition as is charged to any person domiciled in Virginia pursuant to the provisions of § 23-7.4 to:

1. Any person enrolled in one of the institution's programs designated by the State Council of Higher Education who is domiciled in and is entitled to reduced tuition charges in the institutions of higher learning in any state which is a party to the Southern Regional Education Compact which has similar reciprocal provisions for persons domiciled in Virginia;

2. Any student from a foreign country who is enrolled in a foreign exchange program approved by the state institution during the same period that an exchange student from the same state institution, who is entitled to in-state tuition pursuant to § 23-7.4, is attending the foreign institution; and

3. Any high school or magnet school student, not otherwise qualified for in-state tuition, who is enrolled in courses specifically designed as part of the high school or magnet school curriculum in a community college for which he may, upon successful completion, receive high school and community college credit pursuant to a dual enrollment agreement between the high school or magnet school and the community college.

E. The governing board of the Virginia Community College System may charge reduced tuition to any person enrolled in one of the System's institutions who lives within a thirty-mile radius of a Virginia institution, is domiciled in, and is entitled to in-state tuition charges in the institutions of higher learning in any state which is contiguous to Virginia and which has

similar reciprocal provisions for persons domiciled in Virginia. This subsection shall expire on July 1, 1998.

F. The advisory board of Clinch Valley College and the board of visitors of the University of Virginia may charge reduced tuition to any person enrolled at Clinch Valley College who lives within a fifty-mile radius of the College, is domiciled in, and is entitled to in-state tuition charges in the institutions of higher learning in Kentucky, if Kentucky has similar reciprocal provisions for persons domiciled in Virginia.

Any out-of-state students granted in-state tuition pursuant to this subsection and subsection E shall be counted as out-of-state students for the purposes of determining admissions, enrollment, and tuition and fee revenue policies.

G. Public institutions of higher education may enter into special arrangement contracts with Virginia employers or authorities controlling federal installations or agencies located in Virginia. The special arrangement contracts shall be for the purpose of providing reduced rate tuition charges for the employees of the Virginia employers or federal personnel when the employers or federal authorities are assuming the liability for paying, to the extent permitted by federal law, the tuition for the employees or personnel in question and the employees or personnel are classified by the requirements of this section as out-of-state.

Special arrangement contracts with Virginia employers or federal installations or agencies may be for group instruction in facilities provided by the employer or federal authority or in the institution's facilities or on a student-by-student basis for specific employment-related programs.

Special arrangement contracts shall be valid for a period not to exceed two years and shall be reviewed for legal sufficiency by the Office of the Attorney General prior to signing. All rates agreed to by the public institutions shall be at least equal to in-state tuition and shall only be granted by the institution with which the employer or the federal authorities have a valid contract for students for whom the employer or federal authorities are paying the tuition charges.

All special arrangement contracts with authorities controlling federal installations or agencies shall include a specific number of students to be served at reduced rates.

Nothing in this subsection shall change the domiciliary status of any student for the purposes of enrollment reporting or calculating the proportions of general funds and tuition and fees contributed to the cost of education. (1996, cc. 931, 981.)

#### **§ 23-7.4.3. Determinations of eligibility; appeals and guidelines.** – A.

Each public institution of higher education shall establish an appeals process for those students who are aggrieved by decisions regarding eligibility for in-state or reduced tuition charges pursuant to §§ 23-7.4 and 23-7.4.2. The Administrative Process Act (§ 9-6.14:1 et seq.) shall not apply to these administrative reviews.

An initial determination shall be made. Each appeals process shall include an intermediate review of the initial determination and a final administrative review. The final administrative decision shall be in writing. A copy of this decision shall be sent to the student. Either the intermediate review or the final administrative review shall be conducted by an appeals committee consisting of an odd number of members. No person who serves at one level of this appeals process shall be eligible to serve at any other level of this review. All such due process procedures shall be in writing and shall include time limitations in order to provide for orderly and timely resolutions of all disputes.

Any party aggrieved by a final administrative decision shall have the right to review in the circuit court for the jurisdiction in which the relevant institution is located. A petition for review of the final administrative decision shall be filed within thirty days of receiving the written decision. In any such action, the institution shall forward the record to the court, whose function shall be only to determine whether the decision reached by the institution could reasonably be said, on the basis of the record, not to be arbitrary, capricious or otherwise contrary to law.

B. To ensure the application of uniform criteria in administering this section and determining eligibility for in-state tuition charges, the State Council of Higher Education shall issue and from time to time revise guidelines, including domiciliary status questions to be incorporated by all state institutions

of higher education in their admissions applications. These guidelines shall not be subject to the Administrative Process Act.

An advisory committee, composed of at least ten representatives of institutions of higher education, shall be appointed by the Council each year to

cooperate with the Council in developing the guidelines for determining eligibility or revisions thereof. The Council shall consult with the Office of the Attorney General and provide opportunity for public comment prior to issuing any such guidelines. (1996, cc. 931, 981.)

# Program Accreditation

## Academic program accreditation

### College of Humanities and Sciences

Chemistry (bachelor's, master's, and doctoral degrees) – The American Chemical Society  
 Computer Science (bachelor's degree) – Computer Science Accreditation Board of the Computer Science Accreditation Committee  
 Mass Communications (bachelor's and master's degrees) – American Council on Education for Journalism  
 Psychology (doctoral degrees: clinical, counseling) – American Psychological Association  
 Public Administration (master's degree) – National Association of Schools of Public Affairs and Administration  
 Urban and Regional Planning (master's degree) – Planning Accreditation Board

### School of Allied Health Professions

Clinical Laboratory Sciences – National Accrediting Agency for Clinical Laboratory Sciences  
 Health Administration (master's and executive master's degrees) – Accrediting Commission on Education for Health Services Administration  
 Nurse Anesthesia (master's degree) – Council on Accreditation of Nurse Anesthesia Educational Programs  
 Occupational Therapy (bachelor's and master's degree) – Accreditation Council for Occupational Therapy Education  
 Patient Counseling (certificate) – Association for Clinical Pastoral Education  
 Physical Therapy (master's degree) – Commission on Accreditation in Physical Therapy Education  
 Radiation Therapy Technology (bachelor's degree) – Joint Review Committee on Education in Radiologic Technology  
 Radiography (associate's degree) – Joint Review Committee on Education in Radiologic Technology  
 Nuclear Medicine Technology (bachelor's degree) – Joint Review Committee on Educational Programs in Nuclear Medicine Technology  
 Rehabilitation Counseling (master's degree) – Council on Rehabilitation Education

### School of the Arts

Arts (all visual arts degrees) – National Association of Schools of Art and Design  
 Applied Music (bachelor's and master's degrees) – National Association of Schools of Music  
 Dance – National Association of Schools of Dance  
 Interior Design (bachelor's degree) – Foundation for Interior Design Education Research  
 Theatre – National Association of Schools of Theatre

### School of Business

Business and Accounting (all degrees) – American Assembly of Collegiate Schools of Business

### School of Dentistry

Dental Hygiene (bachelor's degree), Dentistry (DDS) and Advanced Dental Education Programs including Endodontics, Oral and Maxillofacial Surgery, Orthodontics, Pediatric Dentistry, General Practice Dentistry, Prosthodontics, Periodontics, and Advanced Education General Dentistry – Commission on Dental Accreditation

### School of Education

Education (all degrees) – National Council of Accreditation for Teacher Education and the Virginia State Department of Education  
 Recreation (bachelor's degree) – Council of Accreditation National Recreation and Parks Association/American Alliance of Leisure and Recreation

### School of Medicine

Medicine (MD) – Liaison Committee on Medical Education  
 Pathology (PhD) – Commission on Accreditation in Clinical Chemistry  
 Post-Doctoral Residency Program in Medical and Public Health Laboratory Microbiology – American Academy of Microbiology  
 Public Health (master's degree) – Council on Education in Public Health  
 Human Genetics – American Board of Medical Genetics  
 Microbiology and Immunology (master's and doctoral degrees) (with Pathology) – American Academy of Microbiology

### School of Nursing

Nursing (bachelor's, master's, and doctoral degrees) – National League for Nursing Accrediting Commission

### School of Pharmacy

Pharmacy (bachelor's and PharmD degrees) – American Council on Pharmaceutical Education

### School of Social Work

Social Work (BSW and MSW) – Commission on Accreditation of the Council on Social Work Education

## University accreditation

Commission on Colleges of the Southern Association of Colleges and Schools.

## Specialized program accreditation

### Division of Student Affairs

University Counseling Services – American Psychological Association  
 Student Health Services – Joint Commission on Accreditation of Health Organizations

### Hospitals

MCV Hospitals – Joint Commission on Accreditation of Health Care Organizations

### Campus Police

Police Academy – Virginia Department of Criminal Justice Services

# University Centers and Institutes

Through the direction of the mission of the university, VCU has implemented several university centers and institutes in effort to enhance research and educational opportunities. University centers are interdisciplinary and comprehensive programs organizing collaboration in teaching, research, service, and clinical and other training functions. These centers have significant external funding as well as a broad-based faculty involvement. All centers direct their efforts in meeting the overall mission of the university. University institutes also meet the general University Mission, involve a broad base of faculty, and earn a significant portion of funding from external sources. These institutes, however, are multidisciplinary, heavily research-oriented and linked to the Virginia Biotechnology Research Park.

## University centers

### Heart Center

The Heart Center of VCU's Medical College of Virginia Hospitals is recognized internationally as a leader in cardiac and vascular services. The center focuses on providing quality care to each and every patient through its devotion to innovative and state-of-the-art clinical subspecialties. As a member of VCU's MCVH, the Heart Center continues the hospital's long history of leadership in providing superior cardiac and vascular care that is effective to children and adults as well as cost effective for health care plan administrators. The center is conveniently located in six Richmond area sites, and offers two 24-hour referral hotlines: (800) 762-6161 for physician referrals and (800) MCV-4141 for physician consultation. For more information, visit the Web site for the Medical College of Virginia of Virginia Commonwealth University.

— — — [views.vcu.edu/mcv](http://views.vcu.edu/mcv)

### Liver Center

The Liver Center, currently in the process of development, has been created to unify the programs in clinical hepatology, liver transplantation and basic science research of hepatic cell biology and metabolic function. In collaboration with these clinical and basic science departments of Virginia Commonwealth University, the center proposes to provide specialized care to children and adults with all types of liver and biliary tract diseases and to develop new clinical and basic research programs to compliment these clinical care activities. Their aim is to combine the efforts of a number of research laboratories and employ a wide variety of analytical, physiological, biochemical and molecular techniques in a single geographic location.

Under government, corporation and foundation grants, various clinical investigators, clinicians, and basic scientists will collaborate their ideas and expertise to promote teaching and education of physicians, graduate and postgraduate students, and the community at large on the importance of prevention and therapy of liver disease. Their efforts also will be applied in further educating physicians in the Richmond and surrounding areas.

### Massey Cancer Center

The Massey Cancer Center (MCC) is the National Cancer Institute (NCI) designated center at Virginia Commonwealth University. The center was established by the VCU Board of Visitors in 1972 as a result of the National Cancer Act.

Serving VCU as the focal point of cancer research, education and health care delivery activities, MCC's programs encompass all schools on the Medical College of Virginia Campus as well as several departments on the Academic Campus. Nationally and internationally recognized scientists

focus their study on the causes, prevention and treatment of cancer. Their discoveries serve as the basis of several clinical trials, including analysis and production of genes, X-ray imaging of molecules, design of new anticancer drugs, and the analysis of the composition of normal and malignant cells using laser technology.

Community service and education is a high priority for the Massey Cancer Center. It has developed several programs and services to improve the assistance and education of the community. These programs include the center's specialized outpatient clinics at MCV Hospitals of Virginia Commonwealth University, the Rural Cancer Outreach Program, MCC's Cancer Rehabilitation and Continuing Care Program, the National Cancer Institute funded Cancer Information Service, and the Linen-Powell Resource Library.

For more information about the Massey Cancer Center and its programs, refer to its Web page.

— — — [views.vcu.edu/mcc](http://views.vcu.edu/mcc)

### Neurosciences Center

VCU's Neurosciences Center is a nationally recognized center having expertise in clinical research and education as well as offering patients expert treatment for neurological and neurobehavioral disorders. The center is composed of the departments of Neurology, Neurosurgery, Psychiatry, Physical Medicine and Rehabilitation, Anesthesia, Neuroradiology, Neuropathology, Biochemistry, Pharmacology and the basic sciences.

Offering the only comprehensive facility in metropolitan Richmond, the center is able to meet its mission of high quality patient care, education and research through its unique ability to establish and maintain a clinical, investigative and training environment for residents and graduate studies in a core curriculum for neurosciences. The

center also serves as a coalition of individuals and programs that offer expertise to physicians and patients throughout the surrounding community.

### **HIV/AIDS Center**

The HIV/AIDS Center of VCU coordinates all HIV/AIDS related activities within the university and is responsible for developing increased collaborative efforts related to HIV/AIDS between the university and the community. The center was created in 1993 as part of the strategic plan for the university and is administered through the Office of the Vice Provost for Health Sciences of VCU. Its mission is to improve the health and social condition of persons with the HIV infection and to prevent its spread through the means of education, research, and service.

As an extension of the AIDS Program of VCU/MCV established in 1986, the center offers multifaceted and interrelated programs composed of a rapidly expanding clinical program, a multidisciplinary program, and HIV antibody testing and counseling site, basic and clinical research programs, and significant involvement in policy development. In addition, the center has a history of collaboration with community-based AIDS Service Organizations, other care providers, and educators and researchers throughout the Richmond area, Virginia, and the nation.

### **Center for Environmental Studies**

The Center for Environmental Studies (CES) was established in 1993 with the goal of creating an academic focus for the growing number of multidisciplinary initiatives in environmental studies at VCU. The center's objectives complement the broader University Mission in teaching, research, and service by providing access to the full scope of technical, instructional, and supporting resources that are offered by a large research university. These resources range from one of the state's three major research libraries to a geographic information system (GIS) laboratory and extensive computing facilities.

However, the most important assets to CES are its faculty and staff. In each of their respective fields, these researchers and educators are recognized experts, contributing a collective network of knowledge to the center's

interdisciplinary programs. These programs include ecological science research, environmental health assessment, environmental policy and planning, ecological risk assessment, and the development and application of emerging environmental technologies. In all of these areas, it is the faculty, staff, and students that emphasize the center's goal of focusing on the interplay between technology and contemporary environmental issues.

### **Center for Public Policy**

The Center for Public Policy (CPP) was established on July 1, 1994 as an initiative of A Strategic Plan for the Future of Virginia Commonwealth University with the goal of focusing the university's multidisciplinary efforts in public policy. As a comprehensive, university-wide center, the CPP has responsibilities in each area of the university's broader missions: teaching, research, and public service.

The center houses and administers the newly established Ph.D. program in public policy and administration; as well as, conducts basic and applied research on a number of public policy matters, with special attention to health policy, urban and metropolitan development, state and local government, and politics. The newly developed program is designed to prepare students for roles concentrating in government, universities, research organizations, and other settings. The Survey and Evaluation Research Laboratory also contributes to the research and evaluation for the government, public and private nonprofit agencies, the mass media, and VCU's faculty and administration. In addition, the center engages in significant service through its training programs, conferences, publications, and other contributions to public discourse.

### **Clinical Research Center for Periodontal Diseases**

The Clinical Research Center for Periodontal Diseases was established in 1962 and is supported by the National Institute of Health. Through this NIH initiative, the federal government has continuously funded the center to support clinical investigation into the pathophysiology of human disease, and the testing of new methods for diagnosis and treatment of disease.

Serving as a link between basic research and clinical practice, the center concentrates its efforts in research, teaching and training, and collaborating researchers. Composed of four major components (biostatistics, human genetics, immunology, and bacterial genetics) the center serves as the research focus for periodontology at VCU.

## **University institutes**

### **Institute for Psychiatric and Behavioral Genetics**

The Virginia Institute for Psychiatric and Behavioral Genetics was established in 1996 to facilitate the development of a multidisciplinary, integrated research program in the genetic epidemiology of psychiatric illness and human behavior and development. The institute offers collaborative support to a variety of VCU departments and programs as well as other universities, federal agencies, and industrial partners through funding provided by federal and private sources. The institute also provides ample educational opportunities for a variety of disciplines through seminars, workshops, classes and clinical studies.

### **Institute for Structural Biology and Drug Discovery**

Established in May 1997, the Institute for Structural Biology and Drug Discovery serves as a link between two distinct disciplines, structural biology and drug design, to create one medicinal field. This field facilitates new, innovative research and scholarship in this collaborative discipline. Through multidisciplinary efforts among its faculty and clinicians, the institute combines structural molecular biology and medicinal chemistry to develop an educational component that prepares postdoctoral fellows and graduate students for the emerging area of structural molecular biology by moving beyond traditional disciplinary constraints.

### **Institute for Clinical Trials**

The Institute for Clinical Trials at VCU is the testing ground for a wide variety of clinical studies performed by the pharmaceutical industry. The institute also will provide multidisciplinary educational opportunities in clinical

research. Through a collaborative network of faculty from the schools of Medicine and Pharmacy, the institute will conduct organized clinical trials research on a centralized basis.

### **Institute for Outcomes Research**

Formed and led by a collaboration of faculty in the schools of Medicine, Allied Health Professions, Nursing, and the MCV Hospitals Authority, the Institute for Outcomes Research is one of the first centers in the country to be organized to foster and support outcomes and quality health care research at an academic medical center. This institute is designed to offer an academic structure within which talented individuals with complimentary disciplines can work in concert to design the elements of high quality clinical care with the utilization of resources. Such elements will concern patient flow for ambulatory care, patient satisfaction, use of the health care system, and evaluation of treatment and therapy.

### **Philips Institute for Oral and Craniofacial Molecular Biology**

The mission of the Philips Institute of Oral and Craniofacial Molecular Biology is to serve the university and the commonwealth of Virginia as a center of educational and research excellence focused on infectious, neoplastic and genetic diseases of the oral cavity, head and neck.

### **Institute for Drug and Alcohol Studies**

In the fall of 1993, the president and Board of Visitors of Virginia Commonwealth University established a new University Center for Drug and Alcohol Studies. However, with its commitment to promote excellence in drug abuse scholarship and to provide a significant level of new funding for growth, the center was elevated to the status of an institute.

The goals of the institute match those of the University Mission. Through multidisciplinary research in basic and

applied science, the institute strives to enhance research and scholarship on drug and alcohol problems. The institute maintains VCU's goal to serve the community by providing the latest advances in drug-related treatment and prevention strategies. The services provided by the outreach programs create an opportunity for VCU to serve as the federally funded regional center for training drug abuse treatment professionals for certification and licensure.

# 2000-01 Undergraduate Admission Requirements

When completing an application to undergraduate degree programs, refer to this chart as well as the chapters within this bulletin for the major, track and school, degree and any special requirements. Applicants are encouraged to contact Undergraduate Admissions (804/828-1222 or 1-800-841-3638) or the college/school sponsoring the intended major (contact numbers listed in the chart below).

All programs begin in the fall and spring of each academic year unless specified in the special requirements field.

VCU has a rolling admissions standard with a priority deadline for freshman applications of Feb. 1 unless specified in the special requirements field. The transfer priority deadline is June 1.

All applicants are required to submit SAT or ACT scores. Specific scores for admission are listed in the special requirements field, if applicable.

Admission to the university requires either a high school diploma or GED. A minimum of four units in English, three units in mathematics (algebra I and one of which must be geometry or algebra II), two units in science (one of which must be a laboratory science), and three units in history, social sciences or government is required for admission. Students are encouraged to complete at least two credits in a modern or ancient language. Although standard high school diplomas are accepted, preference is given to Advanced Studies Diploma; consult the Admission to the University section of this bulletin for specific information.

Major concentration	Contact information	Degree	Special requirements
<b>Accounting</b>	<b>School of Business</b> 828-3710	B.S.	Refer to the School of Business section of this bulletin for specific admission and curriculum information.
<b>Anthropology</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin for additional information.
<b>Art Education</b>	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants are required to complete both the university and the School of the Arts applications as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin.
<b>Art History</b> (tracks in art historical, architectural history, museum studies, art historical/studio)	<b>School of the Arts</b> 828-2787	B.A. B.F.A.	Applicants are required to complete both the university and the School of the Arts applications as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin.
<b>Biology</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin for more information.
<b>Business Administration and Management</b> (business administration, entrepreneurship and small business, international business, and operations management)	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.5 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.

Major concentration	Contact information	Degree	Special requirements
<b>Chemistry</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin for more information.
<b>Clinical Laboratory Sciences</b>	<b>School of Allied Health Professions</b> 828-7247	B.S.	Students must complete the preparatory program prior to admission into the professional program. Refer to the College of Humanities and Sciences section for preparatory requirements.
<b>Clinical Radiation Sciences</b>	<b>School of Allied Health Professions</b> 828-7247	B.S.	Students must complete the preparatory program prior to admission into the professional program. Refer to the College of Humanities and Sciences section for preparatory requirements.
<b>Communication Arts and Design</b> (art direction, digital imaging, graphic design, illustration, interactive multimedia design, kinetic imagery, multidisciplinary studies, three-dimensional design and typographic design)	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants are required to complete both the university and the School of the Arts applications as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin.
<b>Computer Science</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section for additional information.
<b>Crafts</b> (ceramics, fabric design, fiberwork, furniture design, glass-working, jewelry, metal-smithing, woodworking)	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants are required to complete both the university and the School of the Arts applications as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin.
<b>Criminal Justice</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section for additional information.
<b>Dance and Choreography</b>	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants are required to complete both the university and the School of the Arts applications as well as an audition. Refer to the School of the Arts section of this bulletin or the art application for information about scheduling an audition.
<b>Dental Hygiene</b>	<b>School of Dentistry</b> 828-9183	B.S.	Students must complete the preparatory program before applying to the dental hygiene program. Refer to the College of Humanities and Sciences section for preparatory program information..
<b>Dental Surgery</b>	<b>School of Dentistry</b> 828-9183	D.D.S.	Students must complete the preparatory program before applying to the D.D.S. program. Refer to the College of Humanities and Sciences section for preparatory program information.



Major concentration	Contact information	Degree	Special requirements
<b>Economics</b>	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.5 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.
<b>Engineering</b> (biomedical, chemical, electrical and mechanical)	<b>School of Engineering</b> 828-3647	B.S.	Applicants must complete the personal statement essay of the application as well as a personal interview. Students are required to have 1100 combined SAT scores. Refer to the School of Engineering section of this bulletin.
<b>English</b>	<b>College of Humanities and Sciences</b> 828-1673	B.A.	Refer to the College of Humanities and Sciences section for additional information.
<b>Fashion</b> (fashion merchandising)	<b>School of the Arts</b> 828-2787	B.A.	Applicants must complete both the Undergraduate Application and the School of the Arts Application. Refer to the School of the Arts section of this bulletin of the art application for detailed instructions.
<b>Fashion</b> (fashion design or home fashions)	<b>School of the Arts</b> 828-2787	B.F.A..	Applicants must complete both the Undergraduate Application and the School of the Arts Application as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin.
<b>Finance</b>	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.5 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.
<b>Foreign Languages</b> (comparative literature, French, German, Spanish)	<b>College of Humanities and Sciences</b> 828-1673	B.A.	Refer to the College of Humanities and Sciences section for information regarding curricula and placement examinations.
<b>General Studies</b>	<b>College of Humanities and Sciences</b> 828-1673	B.G.S.	Students must submit a supplemental application to the Bachelor of General Studies Program for admission. Refer to the College of Humanities and Sciences section of this bulletin.
<b>Health, Physical Education and Exercise Science</b> (athletic training, community wellness, kinesiotherapy, physical education and teacher education)	<b>School of Education</b> 828-3382	B.S.	Refer to the School of Education section of this bulletin for information concerning each concentration. Students wanting teacher education must choose a major within the College of Humanities and Sciences. Refer to the Division of Teacher Education in the School of Education section of this bulletin for admission requirements.
<b>History</b>	<b>College of Humanities and Sciences</b> 828-1673	B.A.	Refer to the College of Humanities and Sciences section of this bulletin.

Major concentration	Contact information	Degree	Special requirements
<b>Human Resource Management/Industrial Relations</b>	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.5 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.
<b>Information Systems</b> (client server, decision support technologies, information engineering, network management)	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.75 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.
<b>Interior Design</b>	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants are required to complete both the university and the School of the Arts applications as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin.
<b>Marketing and Business Law</b>	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.5 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.
<b>Mass Communications</b> (advertising, electronic media, news editorial, public relations)	<b>School of Mass Communications</b> 828-2660	B.S.	Students must first complete the lower level of study with a 2.5 cumulative GPA before entering upper level of study. Refer to the College of Humanities and Sciences section of this bulletin for additional information.
<b>Mathematical Sciences</b> (applied mathematics, computer science, mathematics, operations research, statistics)	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin for additional information.
<b>Medicine</b>	<b>School of Medicine</b> 828-9790	M.D.	Students must complete the preparatory program prior to applying for admissions to the School of Medicine. Refer to the College of Humanities and Sciences section of this bulletin for preparatory program requirements.
<b>Music</b> (composition, performance, music education)	<b>School of the Arts</b> 828-2787	B.A. B.M.	Applicants must complete both the Undergraduate Application and the School of the Arts Application as well as an audition. Students also must complete a music competency exam and interview for admission. Refer to the School of the Arts section of this bulletin or the art application for instructions about scheduling an audition.
<b>Nursing</b>	<b>School of Nursing</b> 828-5171	B.S.	Incoming freshman must complete the preparatory program before applying to the nursing program. Refer to the College of Humanities and Sciences section of this bulletin for the preparatory program requirements.

Major concentration	Contact information	Degree	Special requirements
<b>Occupational Therapy</b>	<b>School of Allied Health Professions</b> 828-7247	M.S.	Students must complete the preparatory program before applying to the master's program. Refer to the College of Humanities and Sciences section of this bulletin for the preparatory program requirements.
<b>Painting and Printmaking</b>	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants must complete both the Undergraduate Application and the School of the Arts Application as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin or the art application for specific instructions.
<b>Pharmacy</b>	<b>School of Pharmacy</b> 828-3000	Pharm.D.	Students must complete the preparatory program before applying to the professional program. Refer to the College of Humanities and Sciences section of this bulletin for preparatory program requirements.
<b>Philosophy</b>	<b>College of Humanities and Sciences</b> 828-1673	B.A.	Refer to the College of Humanities and Sciences section of this bulletin.
<b>Photography and Film</b>	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants must complete both the Undergraduate Application and the School of the Arts Application as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin or the art application for specific instructions.
<b>Physical Therapy</b>	<b>School of Allied Health Professions</b> 828-7247	M.S.	Students must complete the preparatory program before applying to the master's program. Refer to the College of Humanities and Sciences section of this bulletin for the preparatory program requirements.
<b>Physics</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin.
<b>Political Science</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin.
<b>Psychology</b> (general or urban psychology)	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Students have the option of applying to the general psychology track or the urban psychology track. Students applying to the urban psychology track must complete an university application as well as an urban psychology application for admission. Contact the department or the College of Humanities and Sciences for specific requirements and application.
<b>Real Estate and Urban Land Development</b>	<b>School of Business</b> 828-3710	B.S.	Students enter into Business Foundation Program and must maintain a 2.5 GPA to advance into program. Refer to the School of Business section of this bulletin for more information.

Major concentration	Contact information	Degree	Special requirements
<b>Recreation, Parks and Tourism</b> (recreation and park management, therapeutic recreation, sport management, travel and tourism)	<b>School of Education</b> 828-3382	B.S.	Admission to the Travel and Tourism program is suspended. Refer to the School of Education section for information concerning the other programs.
<b>Religious Studies</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section for additional information.
<b>Science</b> (biology, chemistry, environmental studies, general, mathematical sciences)	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section for additional information.
<b>Sculpture</b>	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants must complete both the Undergraduate Application and the School of the Arts Application as well as submit a portfolio in 35mm slide format. Refer to the School of the Arts section of this bulletin or the art application for specific instructions.
<b>Social Work</b>	<b>School of Social Work</b> 828-0703	B.S.W.	Refer to the School of Social Work section of this bulletin for additional information.
<b>Sociology</b>	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin for additional information.
<b>Theatre</b> (design/production, performance, theatre education)	<b>School of the Arts</b> 828-2787	B.F.A.	Applicants must complete both the Undergraduate Application and the School of the Arts Application as well as an audition and interview. Refer to the School of the Arts section of this bulletin or the art application for specific instructions.
<b>Undeclared</b>	<b>College of Humanities and Sciences</b> 828-1673	No degree	Applicants may enter the university with an undeclared major and with the help of an adviser, transfer into a degree program by their junior year. Refer to the College of Humanities and Sciences section of this bulletin for additional information.
<b>Urban Studies</b> (environment, information systems, planning, public management, public policy and social change)	<b>College of Humanities and Sciences</b> 828-1673	B.S.	Refer to the College of Humanities and Sciences section of this bulletin for additional information.

# AP and IB Credit Guide

Examinations which determine advanced placement are the International Baccalaureate Examinations and the Advanced Placement Tests of the College Entrance Examination Board. AP test scores of 3, 4 or 5 will be awarded from three to 10 semester credits per AP test, depending on the subject area. Credit for IB examination scores will follow in the same way. Each Higher Level (HL) subject passed with a score of 4-7 and Standard Level (SL) with a score of 5-7 will be considered for advanced standing and equivalent to the corresponding sequence of that subject. The chart

below provides information on corresponding VCU credit for both AP and IB test scores.

To ensure consistency, the College of Humanities and Sciences Dean's Office will be the official credit notification point for IB and AP courses. Notification will be sent to the registrar, student and major department. Final determination of credit will be made after test results have been received by the Dean's Office in the College of Humanities and Sciences and have been evaluated by the university. Accepted credits are counted as credits earned toward the degree, but

are not used in the computation of the student's VCU grade-point average.

Courses taken in music, theatre or visual arts will be evaluated by the School of the Arts before award of credit, if any.

An IB diploma will entitle the student to automatic admission to the University Honors Program. Three elective credits will be awarded for the "Theory of Knowledge" course.

For more information contact Dr. John F. Berglund, University Honors Program, (804) 828-1803.

## Curriculum and subject groups

AP Examination	AP Score	VCU Equivalent	VCU Credit	IB Examination	HL Score	SL Score
American History	3,4,5	HIST 103, 104	6	History of the Americas	4,5,6,7	5,6,7
Art History	3	ANTH 103	3	Anthropology	4,5,6,7	5,6,7
Art History	3	ARTF 105 (AFO majors)	4			
Art History	4,5	ARTH 103 (other majors)	3			
Art History	4,5	ARTF 105, 106 (AFO majors)	8			
Art Study: Drawing	3,4,5	ARTH 103, 104 (other majors)	6			
Art Study: General	3,4,5	Course equivalency to be determined by School of the Arts evaluation.	3	Arts (Visual)		
Computer Science A	4,5	CMSC 255	3	Computer Science	4,5,6,7	5,6,7
Computer Science AB	3	CMSC 255	3	Computer Science	4,5,6,7	5,6,7
Computer Science AB	4,5	CMSC 255, 256	6	Computer Science	6,7	7
Economics – Macro	4,5	ECON 211	3	Economics	6,7	7
Economics – Micro	4,5	ECON 210	3	Economics	6,7	7
Environmental Science	3,4	BIOL 103	4			
Environmental Science	5	BIOL 103, L 103	5			
European History	3,4,5	HIST 101, 102	6	History of Europe	4,5,6,7	5,6,7
General Biology	3	BIOL 101, L101	4	Biology	4,5	5,6
General Biology	4	BIOL 101, L101 or BIO152, L152	4	Biology	6	7
General Biology	5	BIOL 151, L151, 152, L152	8	Biology	7	
General Chemistry	3,4	CHEM 101, L101	5	Chemistry	5	6
General Chemistry	5	CHEM 101, L101, 102, L102	10	Chemistry	6,7	7
		GEOG 102		Geography	4,5,6,7	5,6,7
Govt. & Pol/American	3,4,5	POLI 103	3			
Govt. & Pol/Comparative	3,4,5	Political Science Elective	3			
Lang. – FRE, GER, SPA		FREN, GRMN, SPAN 102	4	FRE, GER, SPA (A)	4	4
Lang. – FRE, GER, SPA	3	FREN, GRMN, SPAN 202	3	FRE, GER, SPA (A)	4	5
Lang. – FRE, GER, SPA	4	FREN, GRMN, SPAN 300	3	FRE, GER, SPA (A)	5	6
Lang. – FRE, GER, SPA	5	FREN, GRMN, SPAN 300, 301	6	FRE, GER, SPA (A)	6,7	7
Language/Comp.	3,4,5	ENGL 101	3	English A/B	4,5,6,7	5,6,7
Latin: Catullus/Horace	3,4,5	LATN 302	3	Classics	4,5,6,7	5,6,7
Latin: Vergil	3,4,5	LATN 302	3	Classics	4,5,6,7	5,6,7
Lit. – FRE, GER, SPA	3	FREN, GRMN, SPAN 202	3			
Lit. – FRE, GER, SPA	4	FREN, GRMN, SPAN 330	3			
Lit. – FRE, GER, SPA	5	FREN, GRMN, SPAN 330, 331	6			
Literature/Comparative	3,4,5	ENGL 101	3	Literature	4,5,6,7	5,6,7
		MATH 151	3	Mathematical Methods		5,6
		MATH 200	4	Mathematical Methods		7
Math Calculus AB	3,4,5	MATH 200	4	Mathematics	5,6,7	6,7
Math Calculus BC	3,4	MATH 200	4	Advanced Mathematics	4,5	5,6
Math Calculus BC	5	MATH 200, 201	8	Advanced Mathematics	6,7	7
Music Theory	3,4,5	Course equivalency to be determined by music theory faculty evaluation.	3	Music	4,5,6,7	5,6,7
Physics B	3,4	PHYS 201, L201	4	Physics <sup>1</sup>	4,5	5,6
Physics B	5	PHYS 201, L201, 202, L202	8	Physics <sup>1</sup>	6,7	7
Physics C – E & Mag.	4,5	PHYS 208, L208	5			
Physics C – Mech.	3,4,5	PHYS 207, L207	5	Physics <sup>1</sup>	6,7	7
Physics C – Mech.	3,4,5	PHYS 207, L207	5	Physics <sup>1</sup>	6,7	7
Psychology	3,4,5	PSYC 101	4	Psychology	4,5,6,7	5,6,7
Statistics	3,4,5	STAT 208 or 210	3			
		Course equivalency to be determined by theatre evaluation.		Theatre Arts	4,5,6,7	5,6,7

<sup>1</sup> Provided the laboratory requirements are met

### Dual Enrollment Courses

Qualified students who have taken college-level work while still enrolled in a secondary school may receive academic credit. Courses taken as dual enrollment courses will be treated as VCU courses or transfer credits according to the evaluation guidelines in the Undergraduate and Professional Programs Bulletin (see Page 17).

# Transfer Module

Virginia Commonwealth University subscribes to the Transfer Module. This module is intended to be used as an information tool for students who are unsure of their prospective major and/or transfer institution. Students transferring to VCU with “C” grades or better in any of the courses listed below can be assured that they will be accepted as equivalent to the specified VCU courses or as electives, with the exceptions shown in the footnote. See the specific program listing in the VCU Transfer Guide for courses needed to complete general education requirements. GE = general education requirements, FE = free elective, NC = no credit.

Students completing the Transfer Module will receive a minimum of 35 credits.

## VCCS Courses

## VCU Equivalent

### English (six credit hours)

ENG 111-112 College Composition

GE ENGL 101 and literature elective\*

\* If student transfers with the associate degree, ENG 112 will transfer as the equivalent of ENGL 200 Composition and Rhetoric II. ENGL 112 may not be used as a prerequisite for 300-400 level literature courses.

### Humanities (six credit hours)

ART 101, 102 History and Appreciation of Art  
MUS 121, 122 Music Appreciation  
ENG 241, 242 Survey of American Literature  
ENG 243, 244 Survey of English Literature  
ENG 251, 252 Survey of World Literature  
HUM 201, 202 Survey of Western Culture  
PHI 101, 102 Introduction to Philosophy  
PHI 211, 212 History of Western Philosophy

GE ARTH 103-104 Survey of Western Art  
GE Humanities elective  
GE ENGL 205-206 American Literature  
GE ENGL 203-204 British Literature  
GE ENGL 201-202 Western World Literature  
GE Humanities elective  
GE Humanities elective  
GE PHIL 103 Ancient Greek and Medieval Philosophy  
PHIL 104 Modern Western Philosophy

Note: Studio courses in the fine arts are excluded from the transfer module, but may be acceptable at the institution of the student's choice.

### Social Science (six credit hours)

ECO 201, 202 Principles of Economics  
GEO 221, 222 Regions of the World  
PLS 211, 212 U.S. Government  
PLS 241, 242 International Relations  
PSY 200 Principles of Psychology  
PSY 201, 202 Introduction to Psychology  
PSY 231, 232 Life Span Human Development  
SOC 200 Principles of Sociology  
SOC 201, 202 Introduction to Sociology  
SOC 211, 212 Principles of Anthropology

GE ECON 211 (Macro) ECO 210 (Micro) Principles of Economics  
GE GEOL 307, 308 World Regions  
GE POLI 103 U.S. Government plus 3 elective credits  
GE POLI 105 International Relations plus 3 elective credits  
GE PSYC 101 Introduction to Psychology  
GE PSYC 101 Introduction to Psychology plus 3 elective credits  
FE Social science electives  
GE SOCY 101 General Sociology  
GE SOCY 101 General Sociology plus 3 elective credits<sup>1</sup>  
GE ANTH 103 Cultural Anthropology plus 3 elective credits<sup>1</sup>

### Science (eight credit hours in one sequence, including laboratory)

BIO 101-102 General Biology

GE BIOL 101, 101L Life Science and four science elective credits

CHM 101-102 General Chemistry	GE	No direct equivalent (pre-nursing students may present these courses) <sup>2</sup>
CHM 111-112 College Chemistry	GE	CHEM 101, 101L, 102, 102L General Chemistry
CHM 113-114 University Chemistry (10 cr. hrs.)	GE	CHEM 101, 101L, 102, 102L General Chemistry
PHY 101-102 Introduction of Physics	GE	No direct equivalent <sup>2</sup>
PHY 201-202 General College Physics	GE	PHYS 201-202 General Physics
GOL 105-106 Physical and Historical Geology	GE	PHYS 105, 105L Physical Geology and Laboratory and four credit science course. No direct equivalent for GOL 106 <sup>2</sup>
Or the combination of GOL 105 Physical Geology with NAS 130 Elements of Astronomy	GE	PHYS 105, 105L Physical Geology and Laboratory
	GE	PHYS 103, 103L Elementary Astronomy and Laboratory (This combination does not fulfill the laboratory science requirement for Humanities and Sciences majors)

**History (6 credit hours)**

HIS 101-102 History of Western Civilization	GE	HIST 101, 102 Survey of European History
HIS 111-112 History of World Civilization	GE	HIST 101, 102 Survey of European History
HIS 121-122 U.S. History	GE	HIST 103, 104 Survey of American History

**Math (3 credit hours)**

MTH 151 Mathematics for the Liberal Arts I	NC	No direct equivalent, no credit <sup>3</sup>
MTH 163 Precalculus I	GE	MATH 141 Algebra with Applications
MTH 166 Precalculus with Trigonometry	GE	MATH 151 Precalculus Mathematics
MTH 173 Calculus with Analytic Geometry I	GE	MATH 200 Calculus
MTH 175 Calculus of One Variable I		No direct equivalent, with MTH 176 equivalent to MATH 200 Calculus
MTH 181 Finite Mathematics I	NC	No direct equivalent, no credit <sup>3</sup>
MTH 240 Statistics	GE	STAT 208 Statistical Thinking or STAT 210 Basic Practice of Statistics
MTH 241 Statistics I	GE	STAT 208 Statistical Thinking or STAT 210 Basic Practice of Statistics
MTH 270 Applied Calculus	GE	BUS/MATH 112 Elements of Calculus for the Behavioral, Social and Management Sciences
MTH 271 Applied Calculus I	GE	BUS/MATH 112 Elements of Calculus for the Behavioral, Social and Management Sciences
MTH 273 Calculus I	GE	MATH 200 Calculus

**Notes:** Many senior-college programs, particularly Bachelor of Arts programs, require majors to take courses or demonstrate competency in a foreign language. Although foreign languages are not included in the transfer module, students should begin these requirements early in preparation for transfer.

Additionally, many senior-college programs have specific mathematics and science sequences required or recommended for particular majors. Students should consult with a community college adviser to determine appropriate math and science sequences.

<sup>1</sup> For psychology, sociology or anthropology majors, the three elective credits (PSY 202 or SOC 202 or SOC 212) may not apply to the major, but will count as free electives toward the degree.

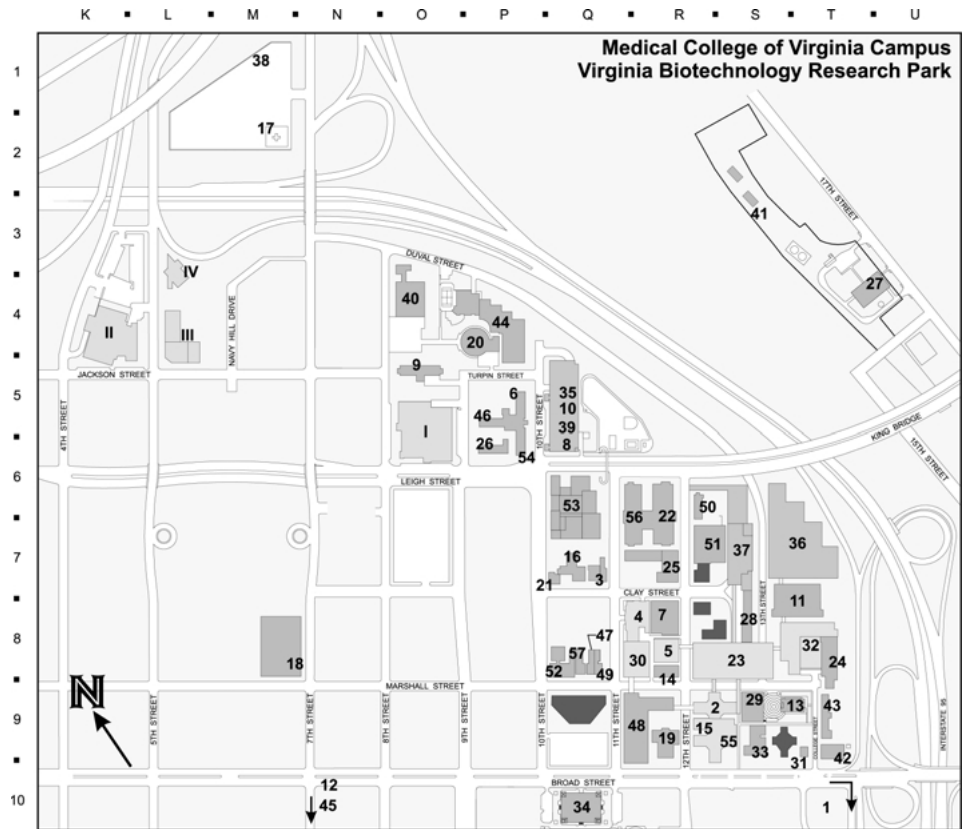
<sup>2</sup> No direct equivalent, but fulfills laboratory science requirement for all majors, except mass communications, computer science, biology, chemistry, physics, social work, psychology, the pre-health science programs and engineering majors.

<sup>3</sup> When combined with MTH 152 or MTH 182, the courses may be used as a prerequisite for STAT 208 or 210.

# Campus Maps

## Medical College of Virginia Campus

- 1 (T-10) 2600 E. Cary St.
- 2 (S-9) A.D. Williams Clinic, 1202 E. Marshall St.\*
- 3 (Q-7) Alumni House, MCV, 1016 E. Clay St.\*
- 4 (R-7) Ambulatory Care Center (New), 417 N. 11th St.\*
- 5 (R-8) Ambulatory Care Center (Old), 408 N. 12th St.\*
- 6 (P-5) Bear Hall, 10th & Leigh streets\*
- 7 (R-8) Blackwell Smith Building, 410 N. 12th St.\*
- 8 (Q-5) Bookstore, MCV Campus, 601 N. 10th St.\*
- 9 (O-5) Cabaniss Hall, 600 N. 8th St.\*
- 10 (Q-5) Child Care Center, MCV Hospitals, 607 N. 10th St.\*
- 11 (T-7) Clinical Support Center, MCV Hospitals, 403 N. 13th St.\*
- 12 (N-10) Daniel Call House, 217 W. Grace St.\*
- 13 (T-9) Egyptian Building, 1223 E. Marshall St.\*
- 14 (R-8) Food Court, MCV Campus, 400 N. 12th St.
- 15 (S-9) George Ben Johnston Auditorium, 305 N. 12th St.\*
- 16 (Q-7) Grant House (Old Sheltering Arms Hospital), 1008 E. Clay St.\*
- 17 (M-2) Heliport, MCV Hospitals, 800 N. 7th St.\*
- 18 (N-8) Hospitality House, MCV Hospitals, 612 E. Marshall St.\*
- 19 (R-9) Hunton Hall, 323 N. 12th St.\*
- 20 (P-4) Larrick Student Center, 641 N. 8th St.\*
- 21 (Q-7) Leigh House, 1000 E. Clay St.
- 22 (R-6) Lyons Dental Building, 520 N. 12th St.\*
- 23 (S-8) Main Hospital, 410 N. 12th St.\*
- 24 (T-8) Massey Cancer Center, 401 College St.
- 25 (R-7) McGuire Hall & Annex, 1112 E. Clay St.
- 26 (P-5) McRae Hall, 10th & Leigh streets
- 27 (U-3) MCV Campus Steam Plant (New)\*
- 28 (S-8) MCV Campus Steam Plant (Old)
- 29 (S-9) Medical Sciences Building, 1217 E. Marshall St.\*
- 30 (R-8) Nelson Clinic, 401-09 N. 11th St.\*
- 31 (T-9) Newton House, 1228 E. Broad St.
- 32 (T-8) North Hospital, 1300 E. Marshall St.\*
- 33 (S-9) Nursing Education Building, 1220 E. Broad St.\*
- 34 (Q-10) Old City Hall, 1001-07 E. Broad St.\*
- 35 (Q-5) Parking & Transportation Offices/Mailing, 615 N. 10th St.\*
- 36 (T-7) Parking, "D" Deck, Faculty/Staff, 515 N. 12th St.\*
- 37 (S-7) Parking, "E & S" Deck, Patients/Visitors, 1220 E. Clay St.\*
- 38 (M-1) Parking, "I" Lot, 7th Street at I-95 Interchange\*
- 39 (Q-5) Parking, "N" Deck, MCV Campus, 615 N. 10th St.
- 40 (O-4) Physical Plant Shops Building, 659 N. 8th St.\*
- 41 (S-3) Physical Plant Storage Facility
- 42 (T-9) Randolph-Minor Annex, 301 College St.



- 43 (T-9) Randolph-Minor Hall, 307-15 College St.\*
- 44 (P-4) Recreation & Aquatics Center, 10th & Turpin streets\*
- 45 (N-10) Richmond Plaza Building, 110 S. 7th St.\*
- 46 (P-5) Rudd Hall, 10th & Leigh streets\*
- 47 (Q-8) Samuel Putney House, 1010 E. Marshall St.
- 48 (R-9) Sanger Hall, 1101 E. Marshall St.\*
- 49 (Q-8) Stephen Putney House, 1012 E. Marshall St.
- 50 (S-6) Strauss Research Laboratory, 527 N. 12th St.
- 51 (S-7) Tompkins-McCaw Library, 509 N. 12th St.\*
- 52 (Q-8) Virginia Mechanics Institute (VMI), 1000 E. Marshall St.\*
- 53 (Q-6) Virginia Treatment Center, 515 N. 10th St.\*
- 54 (P-5) Warner Hall, 10th & Leigh streets\*
- 55 (S-9) West Hospital, 1200 E. Broad St.\*
- 56 (R-6) Wood Memorial Building, 521 N. 11th St.\*
- 57 (Q-8) Zeigler House, 1006-08 E. Marshall St.\*

## Virginia Biotechnology Research Park Campus

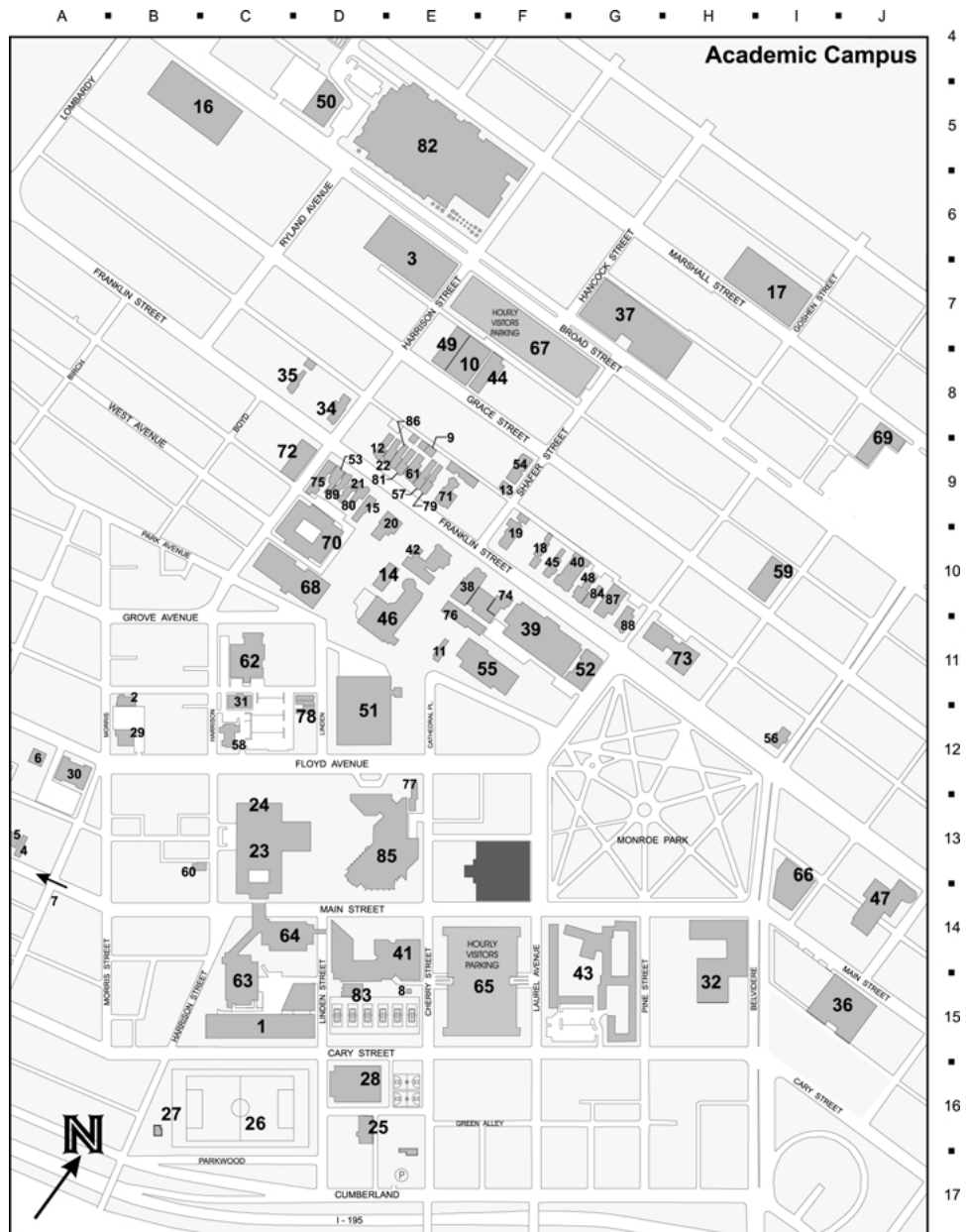
- I (O-5) Biotech Center & Biotech One, 800 E. Leigh St.\*
- II (K-4) Biotech Two, 400 E. Jackson St.\* (under construction)
- III (L-4) Biotech Three, 701 N. 5th St.\*
- IV (L-3) Biotech Four, 737 N. 5th St.\*

\* Accessible (may not indicate total accessibility)



## Academic Campus

- 1 (C-15) Life Sciences Building (Future),  
1000 W. Cary St.\* (under construction)
- 2 (B-12) 107 N. Morris St.
- 3 (E-6) 1205-07 W. Broad St.
- 4 (A-13) 1312 W. Main St.
- 5 (A-13) 1314 W. Main St.\*
- 6 (A-12) 1315 Floyd Ave.
- 7 (A-14) 1814 W. Main St.\*
- 8 (E-15) 6 S. Cherry St.
- 9 (E-9) 916 W. Franklin St. (Rear)
- 10 (F-8) 938-40 W. Grace St.
- 11 (E-11) Adkins House, 824 Park Ave.
- 12 (D-9) Alumni House, Academic, 924 W. Franklin St.\*
- 13 (F-9) 310 N. Shafer St.
- 14 (D-10) Anderson Gallery, 907 1/2 W. Franklin St.\*
- 15 (D-9) Anderson House, 913 W. Franklin St.\*
- 16 (C-5) 1355 W. Broad St.\*
- 17 (I-7) Biggs Building, 900 W. Marshall St.
- 18 (F-10) Bird House, 820 W. Franklin St.
- 19 (F-10) Blanton House, 826-28 W. Franklin St.
- 20 (D-9) Bocock House — Facilities Management,  
909 W. Franklin St.
- 21 (D-9) Bowe House, 917 W. Franklin St.
- 22 (D-9) Buford House, 922 W. Franklin St.
- 23 (C-13) Business Building, 1015 Floyd Ave.\*
- 24 (C-13) Business School Auditorium, 14 N. Linden St.\*
- 25 (D-16) Cary Street Annex, 917 Green Alley
- 26 (C-16) Cary Street Field\*
- 27 (B-16) Cary Street Field Support Facility\*
- 28 (D-16) Cary Street Gym, 911 W. Cary St.\*
- 29 (B-12) Child Care Center, VCU, 1128 Floyd Ave.\*
- 30 (A-12) Dance Center, 10 N. Brunswick St.
- 31 (C-12) Education Annex, 109 N. Harrison St.\*
- 32 (H-15) Engineering Building/Virginia Microelectronics  
Center, 601 W. Main St.\*
- 34 (D-8) Facilities Management, Planning & Design,  
1000 W. Franklin St.
- 35 (C-8) Facilities Management, Planning & Design,  
1014 W. Franklin St.
- 36 (I-15) Finance Building, 327 W. Main St.\*
- 37 (G-7) Fine Arts Center, 1000 W. Broad St.\*
- 38 (E-10) Founders Hall, 827 W. Franklin St.\*
- 39 (F-11) Franklin Street Gymnasium, 817 W. Franklin St.\*
- 40 (F-10) Franklin Terrace, 812-14 W. Franklin St.\*
- 41 (D-14) T. Edward Temple Building, 901 W. Main St.\*
- 42 (E-10) Ginter House, 901 W. Franklin St.\*
- 43 (G-15) Gladding Residence Center, 711 W. Main St.\*
- 44 (F-8) Grace Street Theater, 934-936 W. Grace St.\*
- 45 (F-10) Harrison House, 816 W. Franklin St.
- 46 (E-11) Hibbs Building, 900 Park Ave.\*
- 47 (J-14) Historic District Hotel, 301 W. Franklin St.\*
- 48 (G-10) Hunton House, 810 W. Franklin St.\*
- 49 (E-8) Internal Audit Building, 944 W. Grace St.\*
- 50 (D-5) Sports Medicine Building (Future),  
1224 W. Broad St.
- 51 (D-12) James Branch Cabell Library, 901 Park Ave.\*
- 52 (G-11) Johnson Hall, 801 W. Franklin St.\*
- 53 (D-9) Kearney House, 921 W. Franklin St.\*
- 54 (F-9) Lafayette Hall, 312 N. Shafer St.
- 55 (E-11) Life Sciences Building (Current), 816 Park Ave.\*
- 56 (I-12) Lindsey House, 600 W. Franklin St.\*
- 57 (E-9) McAdams House, 914 W. Franklin St.
- 58 (C-12) Meeting Center, 101 N. Harrison St.\*



- 59 (I-10) Metropolitan Medical Building, 700 W. Grace St.\*
- 60 (B-13) Military Science (ROTC), 6-8 N. Harrison St.
- 61 (E-9) Millhiser House, 916 W. Franklin St.
- 62 (C-11) Music Center, 1015 Grove Ave.\*
- 63 (C-15) Oliver Hall-Education Wing, 1015 W. Main St.\*
- 64 (C-14) Oliver Hall-Physical Science Wing,  
1001 W. Main St.\*
- 65 (E-15) West Main Street Parking Deck, 801 W. Main St.\*
- 66 (I-14) Parking, CV Deck\*
- 67 (F-7) West Broad Street Parking Deck, Bookstore,  
VCU Welcome Center, Business Services Office,  
1111 W. Broad St.\*
- 68 (D-10) Performing Arts Center, 922 Park Ave.\*
- 69 (J-8) Physical Plant Storage Building
- 70 (D-10) Pollak Building, 325 N. Harrison St.\*
- 71 (E-9) President's House, 910 W. Franklin St.
- 72 (C-9) Raleigh Building, 1001 W. Franklin St.\*
- 73 (H-11) Rhoads Hall, 710 W. Franklin St.\*
- 74 (F-11) Ritter-Hickok House, 821 W. Franklin St.\*

- 75 (C-9) Scherer Hall, 923 W. Franklin St.\*
- 76 (E-11) Shafer Street Playhouse, 221 N. Shafer St.\*
- 77 (E-13) Sitterding House, 901 Floyd Ave.\*
- 78 (C-12) Social Work, 102-06 N. Linden St.\*
- 79 (E-9) Stagg House, 912 W. Franklin St.
- 80 (D-9) Stark House, 915 W. Franklin St.
- 81 (E-9) Stokes House, 918 W. Franklin St.
- 82 (E-5) Stuart C. Siegel Center, 1200 W. Broad St.\*
- 83 (D-15) Thalhimier Tennis Center, 7 S. Linden St.\*
- 84 (G-10) Thurston House, 808 W. Franklin St.
- 85 (E-13) University Student Commons, 907 Floyd Ave.\*
- 86 (E-9) Valentine House, 920 W. Franklin St.
- 87 (G-10) White House, 806 W. Franklin St.\*
- 88 (G-11) Williams House, 800 W. Franklin St.
- 89 (D-9) Younger House, 919 W. Franklin St.

\* Accessible (may not indicate total accessibility)



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